Paper
TRADE JOURNAL

OCTOBER 10, 1952 . . . Hoberg Buys Little Rapids Pulp Division, Page 11 . . . Waterproof Wrap for Lumber, Page 12 . . . Selection and Maintenance of Rubber Conveyor Belting, Page 22

LIBRARY
OCT 13 1952

Hot water for pulp washing

uncontaminated ***... at the desired temperature***

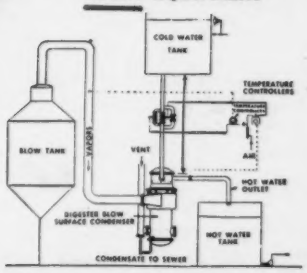
Recover heat from steam released in the digester blow tank with a Swenson Surface Condenser! Its operation is automatic and synchronized with blowing cycles. You'll get *clean* hot water at the desired temperature for pulp washing.

Let a Swenson Engineer help you arrange a condenser system to meet your specific needs!

SWENSON EVAPORATOR COMPANY
15687 Lathrop Ave., Harvey, Illinois
Pulp Washers • Evaporators • Filters
• Digester Blow, Surface and Turpentine Condensers

TALK WITH A SWENSON ENGINEER

HE WILL RECOMMEND THE RIGHT EQUIPMENT



Flow diagram shows general arrangement of Blow Condenser System

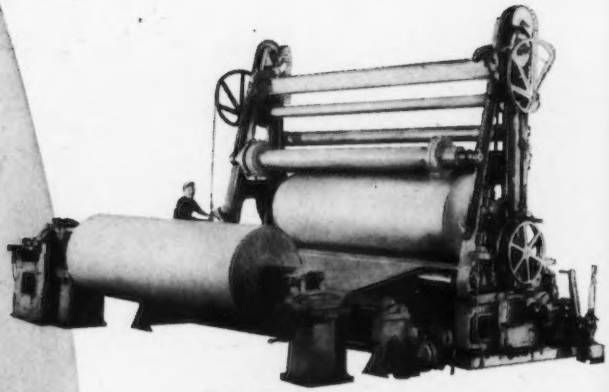
SWENSON

Proved Engineering for the Process Industries
SINCE 1889

A Division of
WHITING
Corporation

Better Rolls

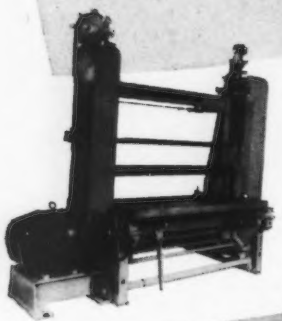
For two generations Camachines have set the top standards for quality in roll production. Every design feature of modern Camachines has been precisely engineered to help you produce rolls of finest quality . . . clean-cut, wrinkle-free and uniformly wound to the exact degree of "hardness" that you need. Camachine-made rolls stand up better in handling and shipping, and because of their uniform density they feed out with a smooth flow that means complete freedom from unwinding troubles. Ask your customers . . . they will tell you that Camachine-wound rolls are a better buy in every way!



CAMACHINE TYPE 19 One of the famous line of Camachine high-speed heavy-duty mill type winders.

at lower cost

Camachine winders and slitters are built to keep downtime, repair and replacement costs at a minimum. Even when operating at Camachine's record-breaking speeds, vibration and consequent wear are virtually eliminated. And when normal wear calls for replacements Camachine's trained service department stands ready to speed the shipment of new parts. Ask your maintenance men and they will tell you why Camachines stay on the job!



CAMACHINE COMMANDER (Type 10). Popular heavy-duty slitter-rewinder for finishing rooms and converting plants.

with less trouble

Camachine slitters and winders are easier on the operator. Simplified controls, handy facilities for accurate adjustments, and other important operating and safety features mean greater production with less operator fatigue. Camachine engineering developments of advanced design provide for faster starts, smoother braking and quicker roll changes. Easy accessibility and precision fittings make routine maintenance speedy and efficient. When you ask experienced operators they'll tell you it's Camachine for them, every time!

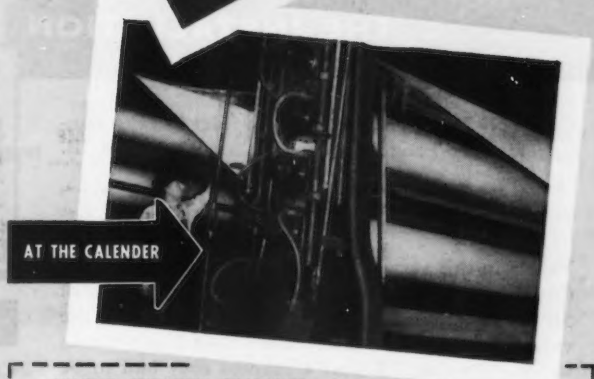
Camachine engineers will be happy to consult with you regarding fast, low cost production, of top-quality rolls.

Camachines®

AA-264

CAMERON MACHINE COMPANY • 61 Poplar Street, Brooklyn 2, N. Y.

All down the line NOPCO® WAX SIZES give outstanding results



From beater to calender stack, sizing needs are most effectively met by Nopco Wax Sizes. Developed to assure positive wax retention on the fibers, and even wax migration through the sheet, these scientifically-developed paper chemicals mean high sizing efficiency at low sizing cost.

Whether you make paper, paper board or fiber board, you'll find Nopco Wax Sizes offer outstanding means for improving your products. AND REMEMBER: Nopco distribution is nationwide; Nopco technical service is at your disposal; and Nopco's representative will gladly arrange for supervised runs in your own mill.

NOPCO'S ALUM-SENSITIVE SIZES

Nopco 2252—Ready-to-use, liquid paraffin wax size (particle size less than ½ micron). Ideal for waterproofing insulating board, butcher's wrap and other internally sized grades.

Nopco 2251-X—Anhydrous size. Saves freight; easy to use; perfectly balanced wax and emulsifier.

Nopco 2251 and Nopco 2251-B—Anhydrous, freight-saving, wax emulsifiers. Will carry highest amount of paraffin wax consistent with good emulsion stability. Small particle size (less than ½ micron) and quick alum sensitivity assure complete retention by fibers.

NOPCO'S NEW ACID-STABLE SIZE

Nopco 2252-A—A widely accepted surface and beater wax size. Resists acid, alum, and alkali. Uniformity guarantees superb performance.

LOOK TO NOPCO AS YOUR SOURCE OF SUPPLY FOR:

Foam Killers • Sulfated Oils • Emulsified Resins • Coating Compounds • Wax Emulsions and Emulsifiers • Rewetting Agents • Insoluble Metallic Soap Dispersions • Sheet Formation Aids • Plasticizers • High Free Rosin Sizes • Pitch Dispersants

NOPCO CHEMICAL COMPANY
Harrison, New Jersey

Gentlemen:

Please send me full information about the Nopco Wax sizes which I have checked below:

☐ Nopco 2252 ☐ Nopco 2251-X ☐ Nopco 2252-A
☐ Nopco 2251 ☐ Nopco 2251-B

NAME.....TITLE.....

COMPANY.....

ADDRESS.....

CITY.....ZONE.....STATE.....

®—Reg. U.S. Pat. Off.

NOPCO TRADEMARK EVOLVED THRU RESEARCH

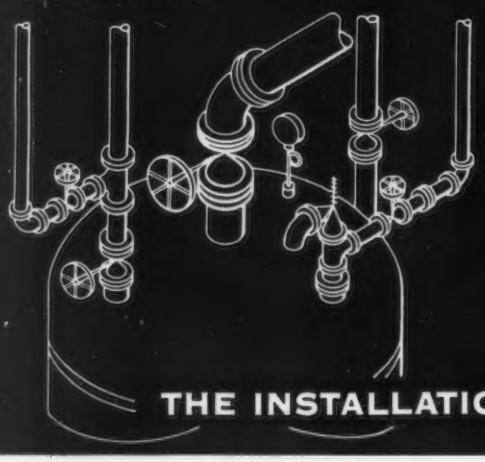
NOPCO CHEMICAL COMPANY

HARRISON, NEW JERSEY

Branches: Boston • Chicago • Cedartown, Ga. • Richmond, Calif.

Are You Getting this Low-Cost Alloy Valve Service?

...on Starch Converters, for instance



THE INSTALLATION

Crane Ni-Resist valves on starch inlet lines to converters, Corn Products Refining Co. plant, Argo, Ill.

THE HISTORY

Valves in this service are constantly exposed to hydrochloric acid vapors under working pressure of 50 psi at approximately 280 deg. F. None of the valves formerly used lasted more than 2 to 3 weeks without repairs. In 3 to 4 months they had to be retired from service for rebuilding. Maintenance costs were excessively high.

To stop the trouble, the plant chose Crane Ni-Resist Alloy Cast Iron Gate Valves with Crane 18-8 Mo trim. Since being installed, these valves have operated at highest efficiency. On last inspection after 19 months' uninterrupted service, they were still in excellent condition.

VALVE SERVICE RATINGS

CORROSION-RESISTANCE:	Ni-Resist OK–18-8 Mo trim ideal
SUITABILITY:	Good for this mildly corrosive service
MAINTENANCE COST:	None–except routine stuffing box
SERVICE LIFE:	5 times longer to-date than other valves
OPERATING RESULTS:	Much less process interruption
PRICE:	In line
AVAILABILITY:	Regular Crane Catalog item

THE VALVE

Crane Ni-Resist Cast Iron Gate Valves combine, at moderate cost, the physical properties of quality cast iron with substantially greater resistance to corrosion, erosion, and wear. With 18-8 Mo Alloy trim, they step up valve efficiency on many chemical process services where common cast iron is inadequate. For recommendations, see your Crane Catalog, or call your Crane Representative.

The Complete Crane Line Meets All Valve Needs. That's Why

More Crane Valves Are Used Than Any Other Make!

CRANE VALVES

CRANE CO., *General Offices:* 836 S. Michigan Ave., Chicago 5, Illinois

Branches and Wholesalers Serving All Industrial Areas

VALVES • FITTINGS • PIPE • PLUMBING • HEATING

Paper
TRADE JOURNAL

OCTOBER 10, 1952, *Vol. 135, No. 15*

Little Rapids Pulp Division Purchased by Hoberg 11
Set Cornerstone at Jessup 11
Brown Plans to Float Hardwood 11
Paper Mills Help Power Pool 11
Canada Ends Newsprint Control 11
Waterproof Lumber Wrap 12
Marathon's New Sandwich Bag 12
Selection and Maintenance of Rubber Conveyor Belting 22
Department of Commerce Studies Bagasse As Newsprint Source 30
Lake States 1st Meeting 41
Western N. Y. Section Empire State TAPPI 1952-53 Program 42
Dr. Lewis Speaks On the Recruitment of Chemists 42

D E P A R T M E N T S

Trends 7
Our Business 9
News of the Week 11
New Uses For Paper 12
People 14
Foreign Notes 16
Equipment and Supplies 18
Industrial Section 22
CLASSIFIED ADVERTISING ... 48
Prices 38
Prices of Materials 39
Literature 40
News of Associations 41
Suppliers 44
Obituaries 46
Production Ratio 46
ADVERTISERS INDEX 60

NEXT WEEK—*With the recent interest again aroused by the Bureau of Standards report on the use of Bagasse for newsprint, made to Celler Committee, we publish next week some facts about the past, present status and the future possibilities of Bagasse by Joseph E. Atchison, formerly of M. S. A.*

S U B S C R I P T I O N S
Payable in advance—Single Copy 15c. U. S. $5.00 per year—U. S. Possessions $7.00 per year.
Canada $7.00 per year.
Latin American Countries $15.00 per year.
All Other Countries $20.00 per year.

Published every Friday by LOCKWOOD TRADE JOURNAL CO., INC., 15 West Forty-Seventh Street, New York 36. Phone: PLAZA 7-2370.

GEORGE E. LOCKWOOD.....President and Treasurer
ARTHUR E. GORDON.....Vice-President
FREDERICK E. WINKLER.....Secretary
HENRY J. PERRY.....Editor
R. E. THUEMMES.....Managing Editor
E. P. NUTTALL.....Associate Editor
D. BRUCE OTIS, JR. .....Associate Editor

Entered as Second Class Matter at the post office at East Stroudsburg, Pa., under Act of Congress of March 3, 1879. Publication Office at Lockwood Trade Journal Co., Inc., 34 North Crystal St., East Stroudsburg, Pa. Printed in U.S.A. Copyright 1952 by Lockwood Trade Journal Co., Inc. *Paper* established Feb. 17, 1899, combined with *Paper Trade Journal* Nov. 16, 1899. *Paper* established Sept. 21, 1910, combined with *Paper Trade Journal* February 19, 1926. All rights to the above titles reserved. Contents of *Paper Trade Journal*, including all articles, illustrations, etc., are copyrighted and may not be reprinted except by permission. *Paper Trade Journal* is indexed in Industrial Arts Index and Engineering Index. Also publisher of *Lockwood's* Annual *Directory of the Paper and Allied Trades.*

REMEMBER
THESE DATES

OCT. 20-24: 40th National Safety Congress and Exposition at Conrad Hilton, Congress, Morrison and Sheraton Hotels.

OCT. 23: Miami Valley Div., of the American Pulp and Paper Mill Superintendents Assn., American Legion, Middletown, Ohio.

OCT. 27-28: Ninth Fibrous Agricultural Residues Conference, Northern Regional Research Laboratory, Peoria, Ill.

OCT. 30 to NOV. 1: National Paper Trade Assn., Edgewater Beach Hotel, Chicago, Ill.

NOV. 5-6: TAPPI Plastics Conference, Marshall Hall, College of Forestry, State University of New York.

NOV. 12-14: Alkaline Pulping Conference, Technical Assn. of the Pulp and Paper Industry, Battle House, Mobile, Ala.

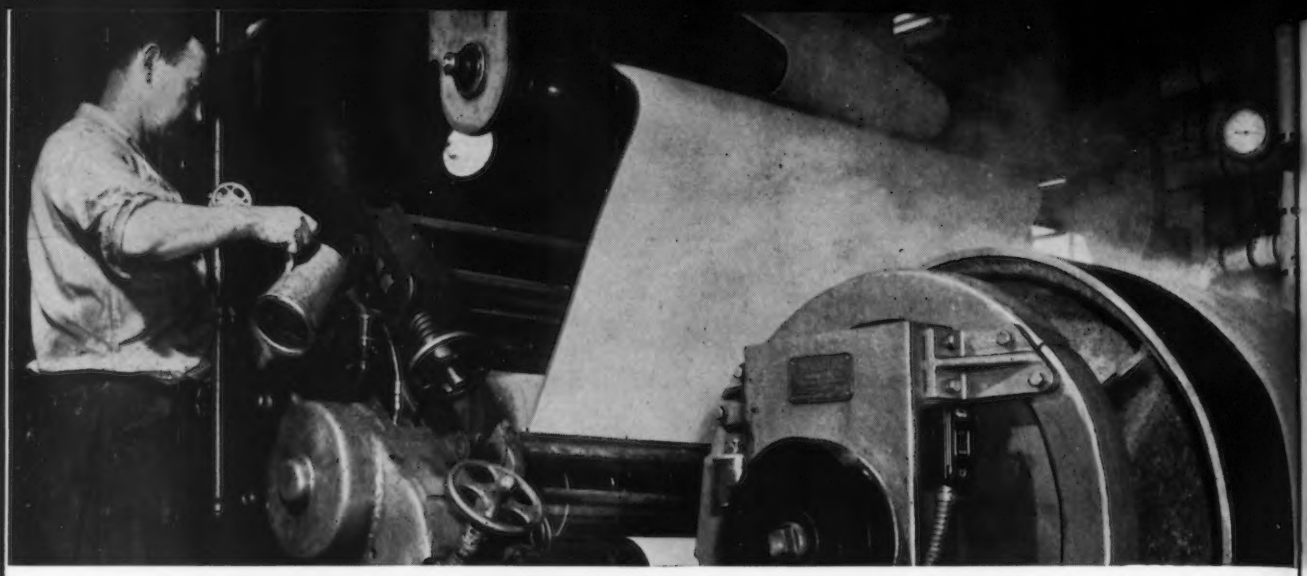
NOV. 18: Miami Valley Div., of the American Pulp and Paper Mill Superintendents Assn., Joint Meeting with the Ohio Section of TAPPI, American Legion, Middletown, Ohio.

NOV. 20-21: TAPPI Corrugated Container Conference, Schroeder Hotel, Milwaukee, Wis.

FEB. 15-20, 1953: APPA, Annual Meeting, Waldorf-Astoria Hotel, New York, N. Y.

FEB. 16-19, 1953: TAPPI, Annual Meeting, Commodore Hotel, New York, N. Y.

JUNE 9-11, 1953: APPMSA, National Meeting, Atlanta-Biltmore Hotel, Atlanta, Ga.



KRAFT IS PROCESSED AT 400 FT. PER MIN. in this corrugator. The two 78 in. corrugating rolls operate on roller bearings. Because the roll and bearing pressures are extremely high, the service is severe. A Sun oil keeps the bearings lubricated without hard-carbon formation.

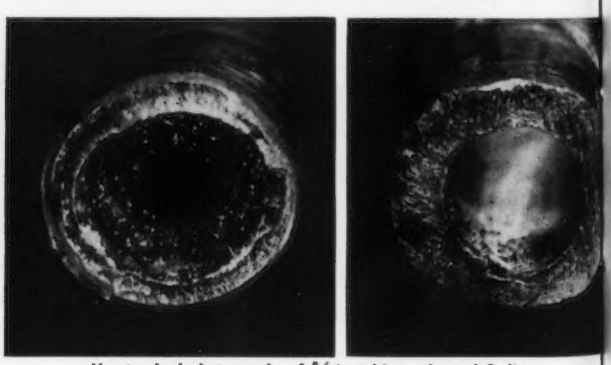
NO CARBON FORMED IN 11 YEARS SINCE CHANGE TO A SUN LUBRICANT

This kraft paper corrugator is lubricated by two systems —sight feed oiling and automatic force-feed. The oil in use 11 years ago to lubricate the roll journal bearings caused trouble. After only a few months' service, it formed hard carbon and clogged the lines and valves of the force-feed system. The roller bearings received insufficient lubrication and slowdowns were numerous.

The company then called in a Sun representative to study the problem. His recommendation—a Sun paper mill lubricant in wide use—was tried out and adopted. Oil lines, cups and regulating valves have remained clean and carbon free ever since. There has not been a single bearing failure due to faulty lubrication. A similar corrugator, installed about five years ago in a subsidiary plant, is also Sun lubricated. No bearing trouble has been encountered.

Sun's representatives and engineers have broad experience in all industrial fields. Their intimate knowledge of plant requirements is available to help you solve lubrication problems. For their advice or for information about Sun Industrial Products, just write SUN OIL COMPANY, Philadelphia 3, Pa., Dept. PT-10.

BEARING HOUSING TEMPERATURES REACH 350 F because the corrugating rolls are steam heated. In spite of this condition, there's no indication of carbon deposits in or around the bearings or in the oil lines. Sun lubricants protect parts even when subjected to high temperatures.



Unretouched photographs of 3/16 in. tubing enlarged 8 dia.

THERE'S NO COMPARISON between an ordinary oil and the naturally detergent grades of Sun oils. The photograph at the left shows the carbon and sludge formed by an ordinary oil. Photograph at right shows typical condition of line kept clean by Sun paper mill lubricant.

SUN INDUSTRIAL PRODUCTS

SUN OIL COMPANY, PHILADELPHIA 3, PA. • SUN OIL COMPANY, LTD., TORONTO AND MONTREAL

SUNOCO®

Paper TRADE JOURNAL

TRENDS

Abundant Supply of Raw Materials Is Assured

An abundant supply of all raw materials awaits paper mill demand on a buyer's market as the year's final quarter gets underway.

Wood Pulp.—In wood pulps, there is ample tonnage of prime grades at competitive contract prices to meet all buying interest. And there is the unsold output of certain other mills that must either be brought into balance with demand, by cutbacks in production, or remain as a joker that can threaten an upset to paper market stability.

Whether phantom or actual, widespread rumors of spot offerings of subquality pulps are reportedly being used to depress the prices of waste paper substitutes in eastern markets. To press time, the source had not been tracked down.

It is held as likely by wood pulp traders that spot offerings will be on the increase, particularly so because there are those mill buyers who prefer the spot market to established contracts—except when the industry is operating at boom levels.

For the most part, however, there is no hysteria about the over-supplied market, no anxiety to sell at prices which are well below the current high costs of production. Gathered from most market interviews was the voiced intent of producers and their agents—whether U. S., Canadian or Scandinavian—to hold the current level through this period of inventory adjustment.

No Major Changes In Waste Paper Prices

Though some slight revisions in waste paper prices had been looked for, early October quotations are mostly unchanged from late September levels.

In the New York market, for example, there was some indication that consuming mills would lift the $10 delivered ($7 f.o.b. cars shipping point) perhaps to the $10 f.o.b. price now being paid for office-waste.

Also in this area, dealers had looked for a drop in the price of Folded News (No. 1) and Corrugated Containers (Old Corrugated), because of the balanced supply-demand in these grades.

In both instances, however, the mills showed no disposition to alter prices. As was also the case with the high grades of shavings, they seemed to prefer to study the trend of demand and the effect of the spot offerings of wood pulp on their market.

Of particular interest at the moment are reports from tissue mills that unbleached sulfites of less than prime quality are more interesting to them than the substitute grades of manila and soft shavings. While the waste paper dealers are trying to hold their quotations, in view of these rumors, some easing in prices of these grades is reported.

Cotton Linters Continue Price Decline

Prices of chemical linters continued their decline during the week ended October 2 with sales reported by the USDA as moderate for both nearby and future deliveries.

Declining prices for most grades during the past few weeks have resulted in some improvement in buyer interest, but many mills still consider the current level of prices to be unattractive. Offerings by oil mills are limited in volume.

Canadians See New Rise In Newsprint Price As Likely

OTTAWA — Notwithstanding the $10 a ton increase obtained by Canadian newsprint companies several months ago, it is learned that this boost has more than disappeared in the cost of production and exchange difference in sales to U.S. customers.

As a result, there is growing speculation that still another increase may be forthcoming before long, though all efforts to gather specific commitments by companies bring a "no comment" reaction. Still it is known that there is dissatisfaction over the dissipation of the last increase which has failed to bring the results in company earnings as intended.

It is hinted here that consideration is being given to seeking another newsprint increase, probably not as large as the last $10 boost, but enough to compensate for the present unfavorable exchange situation for the industry.

Substantial Holiday Trade For Containers Seen Developing

Outlook for containers holiday business looks bright to observers in the Commerce Department's Containers and Packaging Division.

Reasoning from reports that users' container inventories were being maintained at or near the liquidation level, the Department reasoned that development of an early and substantial holiday trade in containers is indicated.

Highlights by areas, as excerpted from the recently released Containers and Packaging Industry Report, Autumn 1952, serve to emphasize that the end of the inventory cycle has been reached and that a revival of demand could be expected.

West Coast.—Demand for Corrugated Shipping Containers in the second quarter was some 15 percent over the preceding quarter. Increased usage of this type of container for shipping citrus fruits was reported. Inventories were balanced with shipments. Future outlook was described as "good" with a possible temporary backlog of orders occurring.

Midwest.—Outlook for Corrugated and Solid Fiber Box industry was good principally because customer inventories are almost liquidated. Second-quarter production was about the same as a year ago. Order backlogs were up. One firm's backlog increased from 3 to 7 days. Some price concessions were reported. Increased volume is anticipated on 12-bottle carry-home beverage containers.

North Central.—The majority of Corrugated and Solid Fiber Shipping Box manufacturers experienced an increase in second-quarter business over the first-quarter volume. Increases varied from 3 to 15 percent. Liquidated inventories at the customer level, seasonal impact, plus government contracts reaching the container stage contributed to the upswing in business. Those firms whose second-quarter business decreased indicated that reduced consumer demand, repercussions from steel strike, and the curtailment of the "V" box production for the government were responsible factors. The "recession" which followed the heavy *scare-buying* of 1951 is believed to have run its course, and boxmakers are viewing the immediate outlook optimistically.

New York City.—Demand for Corrugated Shipping Containers increased slightly in the second quarter and resulted in an overall improvement in volume. Users maintained minimum inventories. Business was expected to pick up through November. One respondent estimated that the year's business would be within 10 percent of 1951. —E.P.N.

Paperboard Production (Tons)*

	Sept. 27 1952	Sept. 20 1952	Sept. 29 1951	Month of Sept.
Production	231,254	234,715	218,174	875,455
New Orders ..	227,129	215,865	206,321	954,126
Unfilled Orders .	459,907	467,535	458,150	459,907
% of Octivity.	94	93	90	86

*Source: National Paperboard Assn.

at the operator's command

Everything from Hydrapulper* conveyor clear thru to jordans or machine headbox "snaps to attention" at the operator's command. There he stands—lord of all he surveys, alert to lights and gauges, flipping levers or pressing buttons. And what happens! Conveyors, Hydrapulpers, Junk Remover*, Ragger*, Hydrafuges*, Classifiners®, Disintegrator*, Selectrap*, HYDRAFINERS®, jordans, pumps and agitators instantly react to the authority of his touch.

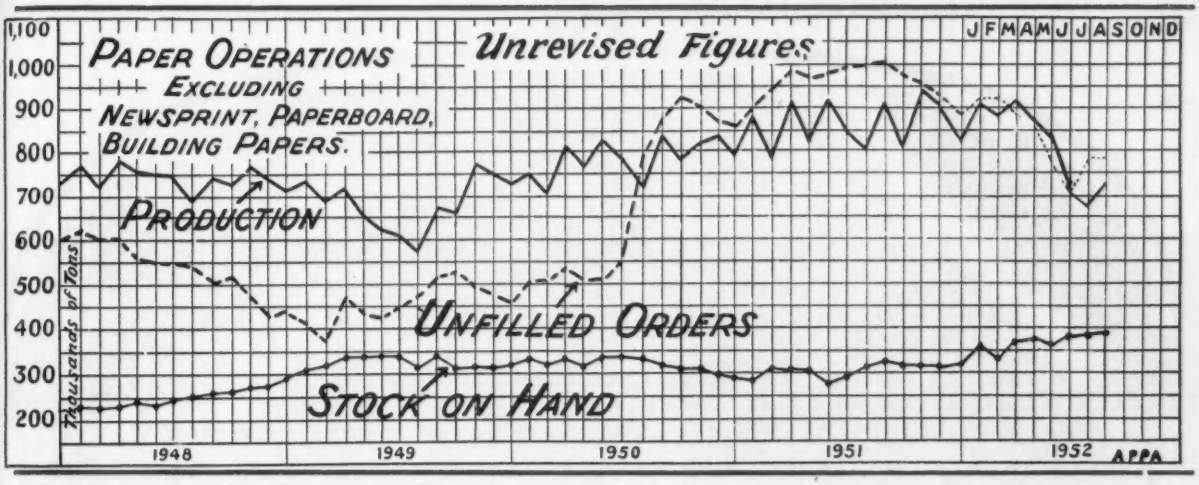
That, my Dear Sirs, is paper stock preparation in the modern remote control tempo and we are proud to have been able to contribute such a system to the Industry.

- **Specialists in remote control stock Preparation Systems**
- **Specialists in panel board design**

*Trade Mark

SHARTLE
BROS. MACHINE CO.
MIDDLETOWN, OHIO

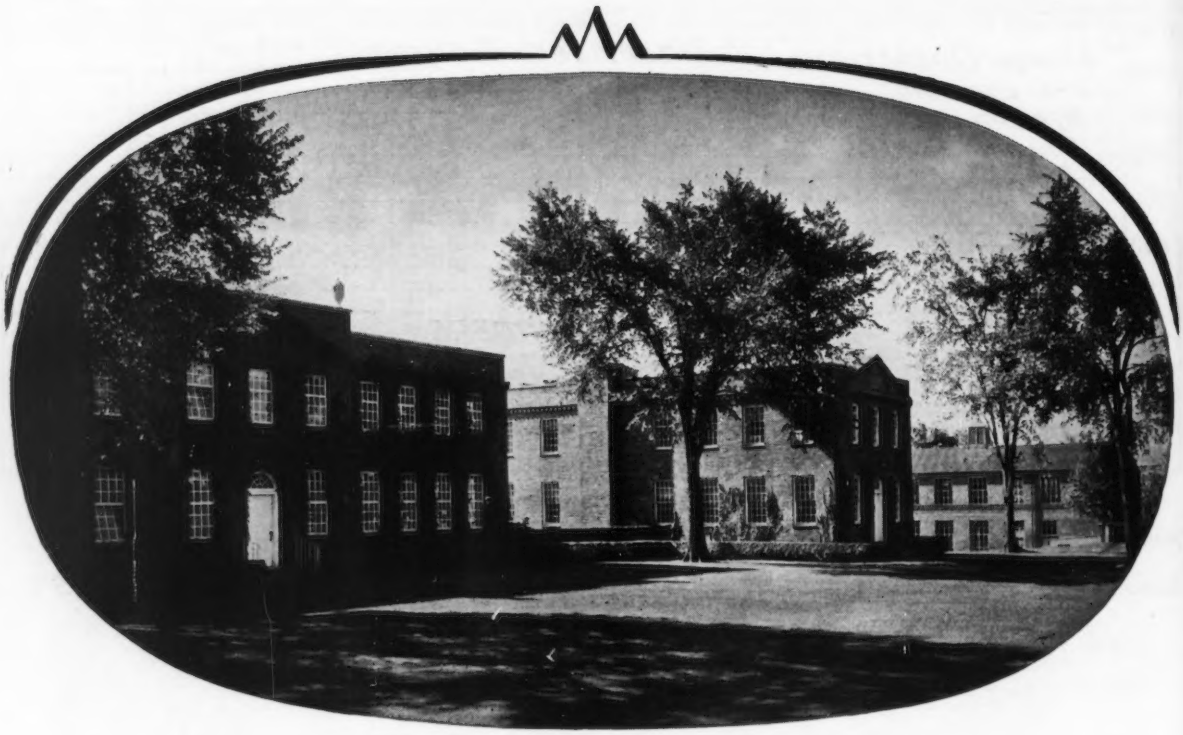
DILTS MACHINE WORKS, Fulton, New York
Divisions of THE BLACK-CLAWSON COMPANY, Hamilton, Ohio
Subsidiary: B-C INTERNATIONAL, LTD., London S. W. 1, England
Associate: THE ALEXANDER FLECK LIMITED, Ottawa, Canada
Western Sales Office: Mayer Bldg., Portland, Oregon
Southern Sales Office: 685 W. Peachtree St., N. E., Atlanta 3, Ga.
Northern Sales Office: 814 N. Superior St., Appleton, Wisc.
Northeastern Sales Office: Dilts Machine Works, Div., Fulton, N. Y.



Brief of Important Figures

Source	Production	WEEK ENDING Sept. 27, '52	Aug. 30, '52	Sept. 29, '51
APPA	Paper Production Percent Capacity[3]	88.6	84.5	99.5
	Unbl. Kraft Paper Production Percent	79.9	78.8	101.8
NPA	Paperboard Operating Ratio Percent Inch Hours	94	90	90
		Aug. 1952	**July 1952x**	**Aug. 1951**
APPA	Paper Production* (Except Newsprint and Building Papers) Tons	736,000	674,613	925,500
	New Orders Tons	722,000	715,195	875,000
	Unfilled Orders Tons	760,806	768,806	1,001,800
	Shipments Tons	724,000	671,085	906,000
		Sept. 1952	**Aug. 1952**	**Sept. 1951**
NPA	Paperboard Production Tons	875,455	886,035	816,356
	New Orders Tons	954,126	832,096	825,249
	Unfilled Orders Tons	459,907	388,360	458,150
	Our Customers Activities Index[1]	**Latest Mo.°**	**Previous Mo.°**	**Year Ago°**
FRS	Manufacturers Total Index	192	205	214
	Durable Mfg. Index	225	249	266
	Nondurable Mfg. Index	180	187	188
	Chemical Products Index	291	295	301
	Mfg. Food Products Index	172	166	176
	Printing and Publishing Index	145	175	155
ODC	Magazine Advg.-Printer's Ink Index	362	362	368
	Prices Index			
BLS	Consumers Price Index[1]	190.8	189.6	185.5
	Wholesale all Commodities[4]	111.8	111.2	114.2
	Wholesale Processed Foods	110.0	108.5	110.7
	Commodities other than Farm Products and Foods[4]	112.5	112.6	115.7
	Wholesale Pulp, Paper[4] and Allied Products	115.3	116.7	120.2
	Purchasing Power of Dollar, Consumers Prices[1]	52.4	52.7	53.9
	General Activity Index			
FRS	Mfg. Production-Worker Payroll[4]	120.5	126.8	126.4
	Unemployment Compensation Initial Claims (M)	1,585	978	1,086
	Miscellaneous Carloadings–Thousands of Cars	1,155	1,298	1,455
	Electric Output (Million KW hr.)	37,007	36,052	35,435
PTJ	Average 32 P & P Common Stocks as of Oct. 4	$35.33	$36.02	$40.97

[1] 1935–39 = 100 Unadjusted Index.
[2] For Five Weeks.
[3] New 6-7 day basis.
[4] New Index 1947–1949 = 100.
* For details see APPA Monthly Statistical Summary—August 1952 Estimated Figures.
° Latest Month Available on Request.
x Revised Figures.



THE VANDERBILT LABORATORIES

Norwalk, Conn.

★

For Testing and Developing
Methods of Improving
Paper Products

★

R. T. VANDERBILT CO., INC.

230 Park Avenue, New York City

Set Cornerstone at Jessup

Laying of the cornerstone for the $25 million chemical cellulose plant for Rayonier Incorporated at Jessup, Ga., on October 3, forecast a brighter era for the Southeast, and reminded the audience that the big undertaking was financed entirely by private means.

Looking at the future possibilities of cellulose chemistry, Rayonier's president, Clyde B. Morgan, recalled that the first half of this century has witnessed tremendous advances in chemistry, high among which was chemical cellulose from wood, first processed in the twenties for the rayon industry.

He declared that there was no reason to doubt that before this century closed equally interesting strides would be made in cellulose chemurgy and that a significant number of new products as well as manufacturing methods will "surely be developed which would help enhance our economic structure."

Bowater Shifts Stock

Bowater Corp. of North America, Ltd., a subsidiary of Bowater Paper Corp., Ltd., of London, has acquired from the parent company all the common stock of the Bowater's Newfoundland Pulp and Paper Mills, Ltd., the Bowater Paper Co., Inc., of New York, and the Bowater Southern Paper Corp., which is building a $35 million newsprint and pulp mill in East Tennessee.

Stock in the North American corporation valued at $23,372,245 is being issued to the London company to pay for the acquisitions. Transferred to the parent concern are 4,367,732 shares of the North American corporation's authorized total of ten million.

Brown Plans to Float Hardwood

Brown Co. is working on a way to make hardwood float to enable them to float this wood from the new section along the Maine-New Hampshire border as they do the softwoods which, at the same operation, are dumped into the nearby Androscoggin River and floated to Berlin, N. H. At present the hardwoods are taken over a 21-mile company road to the main road, then to Berlin, N. H., mills. Big trailer trucks are making two trips a day.

Little Rapids Pulp Division Purchased by Hoberg

Hoberg Paper Mills, Green Bay, Wis., purchased the Little Rapids Pulp division of the Little Rapids Pulp Co., Little Rapids, Wis., October 1. The amount involved in the deal was not disclosed. The Little Rapids organization, headed by Charles N. Egan, president and treasurer, will continue its other branch of operations at their Shawano Paper Mills.

Mr. Egan said that the sale of the pulp division will in no way affect the Shawano paper making operation because of other sources of raw materials. He indicated that the firm will probably install pulp making equipment later at the Shawano plant.

J. M. Conway, president and general manager of the Hoberg firm, explained that for a number of years Hoberg Paper Mills has been purchasing nearly the entire output of 700 tons of groundwood pulp per month from the Little Rapids company. The purchase of the plant guarantees Hoberg control of the raw material supply.

No change in personnel or management of the Little Rapids operation will be made. Resident manager of the firm is Robert Leaf, Jr. Supervising the organization of approximately 30 employes is James Miller. The plant will be operated as a separate unit and will be designated as the Little Rapids pulp division of Hoberg Paper Mills.

Paper Mills Help Power Pool

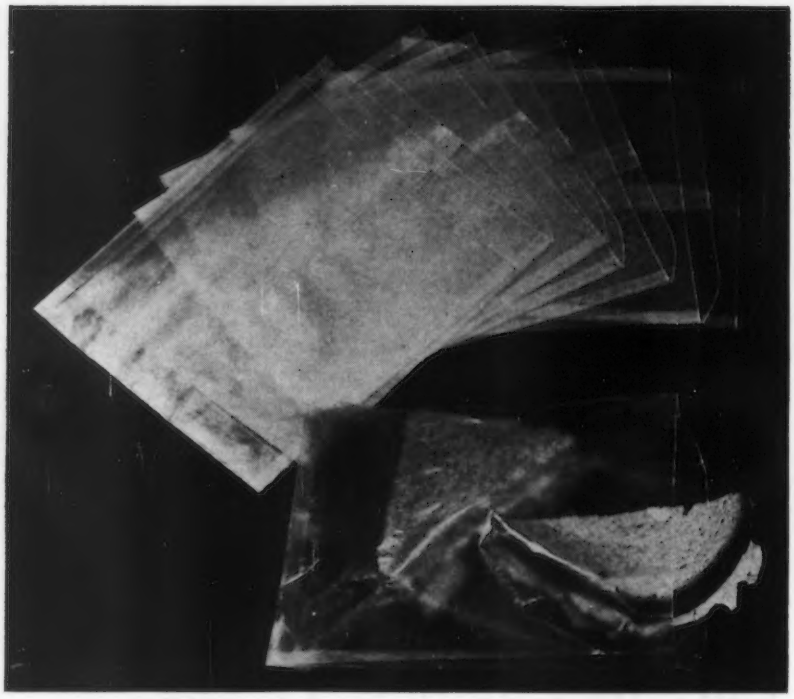
Longview Fibre Co. is supplying electric power to the Northwest Power Pool because of the current water shortage in the Oregon-Washington area. Weyerhaeuser has also joined the pool, as will other companies, if the rainless period continues.

Canada Ends Newsprint Control

OTTAWA — The Defense Production Department has announced that the newsprint division has been closed as part of a general plan to end controls when strategic supplies become more plentiful calling for relaxation.

R. M. Fowler, of Montreal, Que., who acted as Administrator of the newsprint division of the Department, has resigned his post and he is resuming the full-time presidency of the Canadian Pulp and Paper Assn.

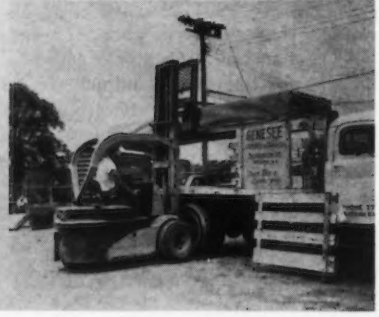
NEW USES FOR PAPER



New Sandwich Bag

The first wet-waxed, transparent sandwich bag to be placed on the national market has been introduced by Marathon Corp., Menasha, Wis.

Although heavily waxed, the single gusset bag is transparent, a factor which appeals to most users, who appreciate being able to see the kind of sandwich in the bag without opening it. Marathon's sandwich bags, made of the same fine quality waxed paper as the company's well known household roll, Waxtex, also offers a new high in air-moisture-tight protection.



Waterproof Lumber Wrap

Here's a brand new market for waterproof papers . . . wrapping lumber for outdoor storage. Union Bag and Paper Corp. reports that the Genesee Lumber and Coal Co., Batavia, N. Y., successfully use its Scutan waterproof paper for this purpose.

Sanford Fisher, secretary and treasurer of Genesee, said that the high cost of building a shed for lumber storage prompted this decision. He estimated the cost of a new shed at $25,000. Figuring interest depreciation, insurance and taxes, this investment would total $3,045 a year in fixed charges. "We can wrap a lot of lumber for $3,045," Mr. Fisher said.

In addition, Mr. Fisher listed these other advantages which paper-wrapped lumber offers:

1. Protects lumber from discoloration by sun and rain. This means dealer does not have to discount it and sell it as second grade lumber.

2. Prevents individual selection of lumber since buyer accepts all pieces contained in each unitized load.

3. Protects materials at job site as well as in lumber yard.

4. Identifies package with "Protected Lumber" sign. This enables builder to capitalize on prestige of using quality lumber.

5. Keeps lumber dry, thus making it easier to cut and handle.

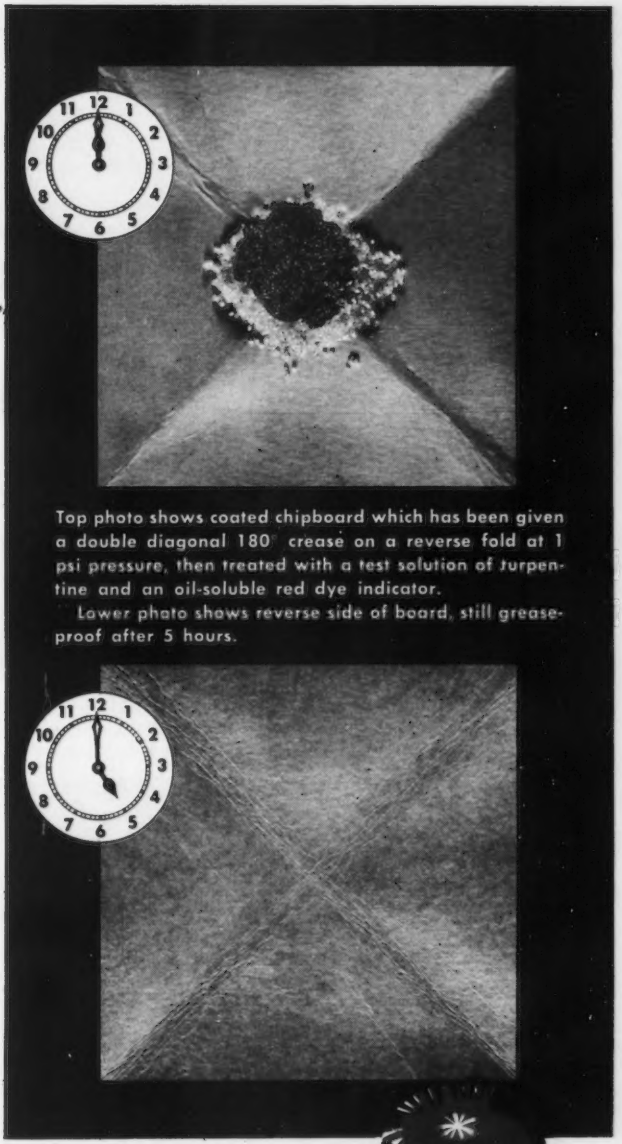
1. After lumber has been sorted into uniform package it is banded with steel straps. Then the unit is covered to the bottom with waterproof paper . . . 2. Thin wooden strips are used to secure the paper close to the sides and ends of the package . . . 3. A "Protected Lumber" sign identifies the package. Contents and date when unit was made up are also indicated on cover . . . 4. A hoist truck then loads the wrapped unit on to a delivery truck. Paper wrapping stays on till contractor uses lumber at building site. ←

Fighting Paper Wanted

Invitation for bids has been issued by the New York Quartermaster Procurement Agency, 111 East 16th street, New York 3, N. Y., on QM-30-280-53-318, covering Paper, wrapping, kraft, 36″ wide, 1,800 rolls; and Paper, corrugated, single faced, flexible, 70 lb. kraft back, 6,000 rolls. Bids will be opened November 3, 1952, at 3:00 p.m. (EST) at the New York office. This procurement is for the U. S. Army.

• QM-30-280-53-321, covering Paper, typewriter, bond, chemical wood, 9,370 reams. Bids will be opened November 12, 1952, at 1:00 p.m. (EST) at the New York office. This procurement is for the U. S. Army.

still grease proof...



Top photo shows coated chipboard which has been given a double diagonal 180° crease on a reverse fold at 1 psi pressure, then treated with a test solution of turpentine and an oil-soluble red dye indicator.

Lower photo shows reverse side of board, still greaseproof after 5 hours.

COPOLYMER EMULSIONS of Polyvinyl Acetate give *better* greaseproof coatings — *at no extra cost!* Greaseproofness of these coatings exceeds that of rigid government specification JAN-B-121. They *last longer.* You get greater permanence than with presently used materials, better resistance and flexibility. They're cleaner looking.

You also get these advantages in the coating operation:

- **No fire hazard**
- **Equipment is easily cleaned**
- **Uniform viscosity permits easy machining**
- **Standard drying equipment can be used**

APPLICATIONS: Cartons for baked goods — doughnuts, rolls, cakes . . . Machine part wrappings . . . Paper plates . . . Meat packages . . . Greaseproof laminant for foil, glassine . . . Heat seal greaseproof coating — eliminates adhesive cost in making greaseproof pouches, cartons, etc.

For full information, clip and mail the coupon.

5 hours later

RESYNS®

National ADHESIVES

270 Madison Avenue, New York 16, N. Y.

I'D LIKE TO INCREASE GREASEPROOFNESS

Please send technical data on National's POLYVINYL ACETATE COPOLYMER EMULSIONS PTJ

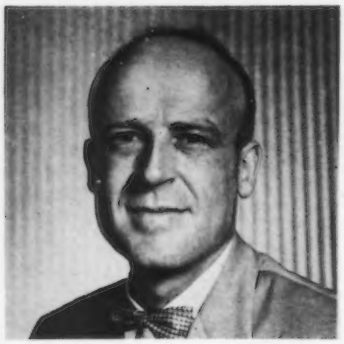
Name _____ Title _____

Company _____

Address _____

City _____ Zone _____ State _____

PEOPLE



BOB JOHNSON is a newly appointed national sales representative of the Paramount Paper Products Co. of Omaha, Nebr., printed tape and label producers. Mr. Johnson was a sales supervisor for Lever Brothers Co. from 1940 to 1946.

RUSSELL D. SCRIBNER has been named division manager of the Thames River (New London, Conn.) mill and box shop of Robert Gair Co., Inc., New York, manufacturers of folding cartons, paperboard and shipping containers. Mr. Scribner joined the company in 1951 as production manager. He spent fifteen years with the DuPont Co. in the cellophane division. He was subsequently in charge of four plants of Shellmar Products Corp.

A.P.W.

ONLIWON

INDUSTRIAL
TOWELS
TISSUE

FRANCIS H. EYRE, of the Lake States Forest Experiment Station, St. Paul, Minn., has been named chief of the Division of Forest Management Research in Washington, D. C. He succeeds **Leonard I. Barrett,** who has been named director of the Timber Resource Review project of the Forest Service.

In his new position Mr. Eyre will coordinate research on growing and handling timber on forest lands conducted at eleven forest experiment stations in the United States, Puerto Rico and Alaska.

GEORGE J. TOOKER has been appointed division manager of the Natick (Mass.) Boxboards Division of Robert Gair Co. Mr. Tooker, who has been technical advisor to the boxboard division, joined the industrial engineering department of Gair in 1941.

LOWELL E. BROWNE has been appointed sales representative of National Container Corp. for the Northern California area. Working through National's Oakland (Calif.) Division, Mr. Browne will continue as a specialist in the canning and food packaging fields in the San Joaquin Valley and surrounding districts.

H. PERCY THORNHILL, who retired as vice-president and treasurer of the Sun Life Assurance Co. of Canada Ltd., in 1950, has been appointed a member of the Executive Committee of the Board of Directors of the Fraser Co., Ltd., as well as to the Board of Directors and the Executive Committee of its subsidiaries, Fraser Paper Ltd. and Restigouche Co., Ltd.

BRUCE M. STERN of San Jose, Calif., has been appointed sales representative of National Container Corp. for the Santa Clara Valley Territory.

WALTER A. KREUGER has been named District Representative with headquarters at Houston, of the Fort Howard Paper Co., Green Bay, Wis., manufacturer of toilet tissue, paper towels and paper napkins.

Mr. Kreuger joined the company in July, 1948. He spent six months at the company's main office in training and inside sales work. He was then assigned to various territories and has spent the last two years serving the Texas and Oklahoma markets.

E. J. FARINA, vice-president in charge of sales of Fibreboard Products Inc., has retired from active service after 32 years with the company. However, Fibreboard will still have the benefit of Mr. Farina's sales experience, as he will continue to be associated with the company in the capacity of sales consultant.

B. P. Altick, who has been with Fibreboard for 27 years, will succeed Mr. Farina. He has been actively and continuously connected with the company's sales activities in every territory in which Fibreboard operates.

J. PRENTICE SANGER, formerly with Crocker-Burbank Papers, Inc., has joined the John L. Rayward Co. as of October 1st as assistant to John L. Rayward.

Earlier this year Mr. Sanger was on loan to the Pulp, Paper & Paper Board Division of the National Production Authority in Washington. In his new capacity he will be handling industrial grades of paper and paper board.

L. L. G. BENTLEY, Canadian Forest Products Ltd., British Columbia, left early last month for Europe to visit old customers and to meet potential new ones.

KENNETH A. BOOS has been elected treasurer and **James J. Upson,** director, of the Upson Co. Both posts were held by **Otto L. Koehn** before his death August 6.

EDWARD N. CROOK, president of the Crook Paper Box Co., North Kansas City, Mo., observed his fiftieth anniversary in the paper box industry October 2. He began his career in 1902 in Nashville, Tenn., and founded his own firm in 1921.

NEW VARIATIONS ON AN OLD THEME*

Recording new and old variations on the uses of its products

is a fundamental part of Niagara's service to industry.

NIALK® Liquid Chlorine

Where whiteness counts, this chemical is first choice with most papermakers for effective, economical paper bleaching. The purity of NIALK Liquid Chlorine is carefully protected in transit by shipment in scrupulously clean, well-maintained tank cars.

Due to forward-looking research and precise production methods, NIALK products rank with the best in the field of electrochemicals.

NIAGARA ALKALI COMPANY

60 East 42nd Street, New York 17, New York

* NIALK LIQUID CHLORINE NIALK CAUSTIC POTASH

NIALK CARBONATE OF POTASH NIALK PARADICHLOROBENZENE

NIALK CAUSTIC SODA NIALK TRICHLORethylene

NIAGATHAL® (TETRACHLORO PHTHALIC ANHYDRIDE)

FOREIGN NOTES

U. K. Shows Improvements

Paper—Most important feature of the United Kingdom paper industry over the past few weeks has been the announcement by the Government to free newsprint and mechanical printings from price control. This has been made possible because the United Kingdom makers of newsprint and the principle consumers of that commodity (the newspapers) have been able to reach agreement on the future price of home-produced newsprint.

The mutually agreed price fixed by the Newsprint Supply Company (who represent the newspapers) and the Association of Makers of Newsprint (on behalf of the mills) is to be £56 ($156.24) a ton. The previous maximum price chargeable by British mills, was £62 ($171) a ton, and this order has now been revoked. The power to reintroduce it, however, remains.

At the same time, the larger newspapers of Gt. Britain proposed that the existing rationing system should be amended by the suspension of tonnage rationing, because, they said, the existing stocks and current supplies would allow a small increase in consumption in the current half-year.

Such an increase was expected to be modest as imports of newsprint from sources other than Canada might have to be reduced next year.

Accordingly, on August 24th, tonnage rationing of newsprint was suspended and newspapers allowed to increase the number of pages they print and the number of copies they sell. The experiment is not expected to lead to any considerable increase in newsprint consumption, but the new arrangement will be closely watched to see that consumption does not rise unduly. Provision is also made in the new order for new newspapers. It is thought, however, that the ruling factor will be costs, both for paper and production, and few newspapers will be able to afford excessive indulgence in their new freedom.

The freeing of newsprint and mechanical printings from control means that nearly 13 years of Government regulation of the paper industries' prices has been brought to an end. The progress has taken a few years and the retention of price control over these two grades has reflected the special consideration which has been given to newsprint and mechanical printings. However, in conformity with the changing conditions in the British paper trade, newsprint and mechanical printings are no longer in short supply; in fact, there has been some reluctance on the part of some newspapers to utilize the extra newsprint authorized some months ago because of the difficulty in obtaining advertising.

Hopes for a complete revival in other departments of the paper industry hinge on the come-back being made in the rayon industry. When the world recession began, rayon was seriously affected and a number of factories closed down. This had an immediate effect on the paper industry. But now, with a number of rayon and chemical factories fast approaching the condition where they can maintain full production, the paper industry looks forward to a complimentary revival in its own trade.

This view is upheld in the August edition of a monthly economic survey issued by the British Government which for the first time for many months presents a much brighter picture. It should be remembered that this time of year is normally a slack one for the British and any revival of any sort is to be heralded with great optimism for the future.

One thing is sure. When the holiday period is over, the future programmes of paper-makers will need to be reviewed in the light of the slightly changing conditions. If this entails renewal of contracts, the effects will be quickly seen in the pattern of the paper trade.

One commentator has said of the present market conditions: "Signs of improvement are appearing. Customer's stocks are diminishing and buyers are returning to the market."

Finance—The United Kingdom, as is well known, has long had an adverse balance of payments due to the fact that the value of imports far exceeds her imports. Some progress has been made in reducing this margin, but imports of raw materials, including wood for pulping, has reached £71.1 million ($192.6 million) for the first six months of this year. This is £19.5 million higher than the same period 1951.

The effect of import cuts is clearly seen in finished paper and board where imports declined from £34.3 million ($94.86 million) in the first six months of 1951 to £27.7 million (66.7 million) in 1952. On the export side there is about a £6 million ($16.7 million) gain. The adverse balance for paper alone, however, goes up from £66.9 million ($186.65 million) to £73.6 million ($199.7 million). This is in contrast to the overall national trade deficit and in terms of figures means that the pulp-paper trade of the United Kingdom accounts for one-sixth of the national adverse balance.

Prices—Lower prices in wrappings, fines and folding box boards from Scandinavia have been announced. A message from Stockholm states that leading manufacturers of paper, cardboard and pasteboard decided to reduce their export prices by between 2 and 2½% to stimulate foreign sales. Wrappings will be down 14 to 16%, fine paper 2½ to 10% and pasteboard and cardboard by 7 to 20%. Wrapping paper has now been reduced by as much as 600 kronor a ton this year.

Imports and Exports—Imports into the United Kingdom of paper and cardboard during the first six months of 1952 showed a decrease of 40% compared with the same months in 1951. Exports were up 9%.

Exports of paper from the United Kingdom in June totalled 17,728 long tons compared with 18,756 tons in June, 1951. This brought the total for the first six months 1952 to 139,326 tons. Last year it was 123,493 tons. England's largest buyer is Australia, who, during the first half of the year purchased 59,714 tons. The USA bought 1,409 tons (as against 2,803 January-June 1951 and Canada, 623 tons (as against 899 tons January-June 1951). The first six months sales to the USA earned the United Kingdom about $1,700,000.

Wood Pulp—The wood pulp market is in a state of flux with no definite movement one way or another. One agent reports a distinctly firmer trend and says that the paper trade is becoming much busier. There is a certain amount of pulp being bought.

Whereas in July and August there was nothing done with consumers third quarter reservations, the position now is that about ⅔rds of the reservation have suddenly been taken up. Nobody, however, is in a great hurry to fix 4th quarter contracts.

Prices have stabilized around the levels announced in August. These were: £56 - £58 ($156.1 - $161.7) for bleached sulfite, £58 ($161.7) for bleached kraft, and £45-£48 ($125.6-$133.9) for strong sulfite. Kraft remains the weakest of the market, fluctuating between £40-£44 ($111.6-$122.76) all per long ton c.i.f.

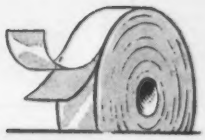
Some guide may be gained from the news that Norway has reduced her rayon pulp about £10 ($27.9) a ton and the low standard grade is now £68 ($189.6), while the super grade is £73 ($203.67). Sweden is expected to follow suit shortly, but not to the same extent.

It is noticeable that little business is being done with the American and Canadian markets. Main reason for this is that the present rate of exchange is having an adverse effect

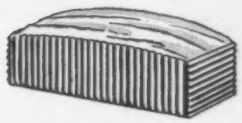
(Continued on page 44)

WHEN IT'S RELEASE YOU WANT IN PAPER

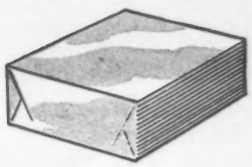
Du Pont "Quilon" is the answer!



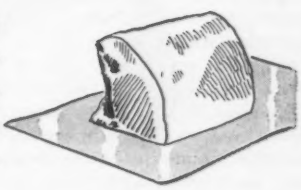
For rubber-separator papers, pressure-sensitive tapes and labels, "Quilon" makes possible easy stripping.



For bakery tray and pan liners, "Quilon" greatly reduces sticking of baked goods.



For frozen-food packages and locker wrap, "Quilon" eliminates fiber pull when frozen-food packages are separated and when frozen food is removed from wrap.



For butcher's wrap and meatboard, "Quilon" reduces sticking, keeps paper from tearing when unwrapped.

When you treat paper with Du Pont "Quilon" stearato chromic chloride, you give it release qualities of unusual functional value. Yet the cost is low because the amount of "Quilon" needed is so small. And the treatment is permanent because "Quilon" is non-migratory—anchors tightly to the fibers of paper.

"Quilon" is water-soluble and easily applied by spray, transfer rolls or immersion. Treatment can be done at the size press or, for heavyweight papers, at calender stack water boxes. "Quilon" doesn't give paper a waxy feel . . . doesn't adversely affect any dry properties of paper.

"Quilon" also provides outstanding water repellency and size

"Quilon" can be used to impart a high degree of size and water repellency to paper. And as a pre-treatment for wax-coated paper, "Quilon" increases lactic-acid resistance. It also has wide application for minimizing undesirable water sensitivity of many soluble coatings and adhesives.

Improved products, greater sales. *The novel properties and amazing versatility of Du Pont "Quilon" may help you increase your sales of standard products or make superior new products. Send for the technical bulletin . . . it gives more facts and figures on uses and methods of application.*

"Quilon" is a registered trade mark of E. I. du Pont de Nemours & Co. (Inc.)

DU PONT
REG. U.S. PAT. OFF.

150th Anniversary

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

E. I. du Pont de Nemours & Co. (Inc.)
Grasselli Chemicals Department
Wilmington, Delaware

Please send me free technical bulletin describing "Quilon" stearato chromic chloride.

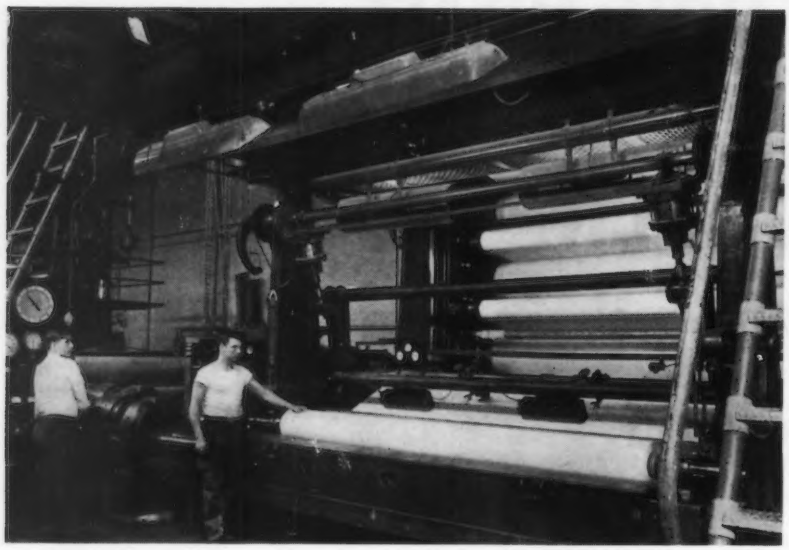
Name_____ Title_____

Firm_____

Address_____

City_____ State_____

EQUIPMENT AND SUPPLIES



Dust Compensated 75° Gloss Recorder

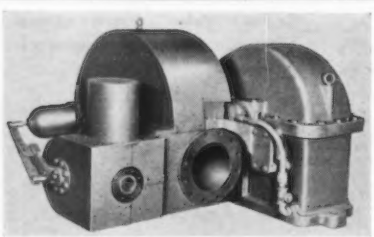
The new Dust Compensated 75° Gloss Recorder was developed and produced by Gardner Laboratory, Inc., Bethesda, Md. Designed to measure 75° specular gloss of coated book paper, it also is held useful for waxed, glassine, and printing papers in the same gloss range.

Potential uses of the device are named as: (1) to record the gloss of paper, as it is polished on a supercalender stack; (2) as it is coated or calendered on the dry end of a fourdrinier machine; (3) record the gloss developed by a waxing, lacquering, or other coating operation on paper; (4) provide a numerical gloss indication of any material flowing in a continuous web, e.g., control of a waxing operation on linoleum.

Basically the instrument consists of a photoelectric sensing unit which may be mounted over a moving web of paper, and a sensitive electronic measuring unit that receives and records the photoelectric signals received from the sensing unit. Illustrated is installation on a supercalender stack where there are two exposure heads, one near each edge. Instrument operator can record output of either gloss head he chooses. The measurement unit must of course be mounted where the machine operator can watch it easily.

Gloss recorders similar to this unit excepting for geometric design of the sensing unit can be built to record gloss on low-gloss papers such as bond, uncoated book, newsprint, and the like.

Technical data sheet available.



High-Speed Reduction Gears

Elliott Co., Jeannette, Pa., announces a new line of high-speed reduction gears for mechanical drive turbines. The new gears are available in built-in or coupled designs, and are offered in gear ratios up to 5:1 for built-in units; up to 8.5:1 for the coupled design.

Built-in gears include turbine and gear case firmly secured together, with turbine wheels and pinion mounted on the same sturdy, high-speed shaft. This construction eliminates exhaust-end bearing and coupling, permitting a compact unit of minimum overall length, it is said.

The coupled design is a self-contained gear unit flexibly coupled to a separate turbine drive.

Both designs feature precision-hobbed double helical gears, liner-type sleeve bearings, special Kingsbury-type shaft seals, and self-contained forced feed lubrication system.

Address the Advertising Dept. for descriptive bulletin, H-19.

Alcowax

Semet-Solvay Division, Allied Chemical & Dye Corp., 40 Rector street, New York, N. Y., has developed a new product called Alcowax.

Having a molecular weight number average of approximately 2000 and a typical melting point of 100°C., the product is expected to have real interest in all types of coating applications. Many applications for this product are now possible since most plants have equipment to handle this low molecular weight material, the manufacturer points out. Alcowax is readily dispersible at lower temperatures.

Manufacturers and processors having an interest in applications requiring low temperature, flexibility, water-resistant and low moisture vapor properties, gloss after coating, good electrical properties, internal wax-sizing operations and vegetable wax replacement, will probably want to examine this product.

A new small commercial unit has recently been completed to produce this material and a full-size commercial plant is under construction. Address Petrochemical Sales, Semet-Solvay Division, Allied Chemical & Dye Corp. for samples or for further information and technical data.

Beta Gauge Used To Control Carbon Application

Use of nuclear energy to control the amount of carbon applied on carbon paper through installation of the Accu-Ray beta gauge equipment is made known by Industrial Nucleonics Corp., 1205 Chesapeake avenue, Columbus 12, Ohio.

Installed on the production line of one-time carbon at Standard Register Co., Dayton, Ohio, the AccuRay beams invisible beta rays through the carbon paper and continuously records on a chart the exact amount of carbon applied with an accuracy that, Standard Register claims, shows variations of infinitesimal quantities of carbon particles.

all wrapped up and *Going Places*

Pity the poor product that's packaged in drab paper. It won't go very far in today's highly competitive markets. That's why America's smartest merchandisers want paper that provides standout package-appeal. Titanox pigments will add sales impact to just about any kind of paper. Colors are brightened, printing legibility is boosted, yellowing is checked, show-through is minimized. Our Technical Service Department will be glad to show you how easily Titanox pigments can be added at a convenient stage of your paper processing.

Titanium Pigment Corporation, 111 Broadway, New York 6, N.Y.; Boston 6; Chicago 3; Cleveland 15; Los Angeles 22; Philadelphia 3; Pittsburgh 12; Portland 9, Ore.; San Francisco 7.

In Canada: Canadian Titanium Pigments Limited, Montreal 2; Toronto 1.

3005

® **TITANOX**

the brightest name in pigments

TITANIUM PIGMENT CORPORATION

Subsidiary of **NATIONAL LEAD COMPANY**

Basically, the AccuRay beta gauge works as follows. On the lower arm—located beneath the paper being carbon coated—is a source box containing a capsule of Strontium-90. On the gauge arm—extending above the paper—is a detector which picks up the beta electrons that penetrate the paper. The more carbon that is added, the fewer electrons that penetrate the sheet. These variations in thickness are transmitted to a recorder chart and enable the operator to see at a glance how much carbon is being applied at the very moment the tissue comes out of the coater. This recording chart is calibrated to read in pounds of coating per ream.

The amount of coating, therefore, can be held to accurate specifications without depending on the operator to gauge thickness by one of many methods tried in the past, including dependency on the operator's "eye." Because the detector unit moves back and forth across the web during the operation of the machine, measurements can be taken at any point across the web of paper as it comes out of the carbon coater.

Present plans are being made to use the AccuRay as a sensing element in an automatic control system that will mechanically make adjustments to the coater whenever the gauge indicates a correction is necessary.

Plant Fire Truck

A unique plant fire truck that can easily negotiate narrow aisles is available through the Ansul Chemical Co., Marinette, Wis.

Designed by plant protection officials at the Chevrolet plant in Baltimore, the truck actually is a Model C7-21 Clarktor mule to which an Ansul S-150 dry chemical fire extinguishing unit has been added behind the driver's seat. Two 20-lb hand extinguishers also are placed on each front fender.

The unit also carries a 20-foot extension ladder, an MSA Chemox breathing apparatus, rubber boots, rope, fire axes, siren, headlights, a powerful portable searchlight, a 50-pound carbon dioxide cylinder and a small vaporizing liquid type extinguisher.

Jacketed Fittings of Various Materials

Parks-Cramer Co., Fitchburg, Mass. has extended its line of jacketed pipe and jacketed fittings by making available more sizes and a greater variety of materials.

Where standard practice has been to supply cast-iron cocks and fittings, the regular line can be made up in Meehanite, ductile iron, steel, ni-resist, aluminum, and bronze.

Application of cast-iron jacketed pipe and fittings is held to be useful to mills which coat their product with asphalt. For mills handling gums where color and purity are important, the use of bronze or aluminum is said to be indicated.

Write for Bulletin No. 152.

Copper Clad Steel Plate

Commercial production of copper-clad steel plate, a new engineering material combining the special properties of copper and steel, has been announced by Lukens Steel Co., Coatesville, Pa. Copper-clad steels are expected to meet a long-felt want for many electrical, heat transfer and corrosion applications requiring copper's high conductivity and corrosion resistance combined with steel's low cost, strength and rigidity. Applications will include electrical apparatus, evaporators, hot water heaters, heat exchangers, tube sheets, tanks and vessels.

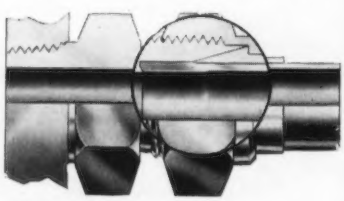
Combining unique chemical and physical characteristics with good fabrication properties, copper-clad steels simplify problems of equipment and fabrication in many types of applications. Fabrication time can be cut considerably, cutting production costs, it is said. For many types of equipment a smaller thicknes of copper-clad steel can serve the same purpose as a thicker section of solid copper, reducing material costs and saving space and weight.

Available in plate gages only, the new material consists of a layer of copper permanently and uniformly bonded to one side of a carbon steel backing plate. Cladding percentages of 10, 15 or 20 percent of total plate thickness will be regularly furnished in plate sizes up to 120 inches width, 380 inches long and 3/16 to 1¼ inches thick. Copper-clad steels are also available in flanged only or flanged and dished heads.

Homogeneous and dense in structure, the copper is unchanged in any way by being bonded to the steel. Characteristic special corrosion resistance and excellent electrical conductivity are assured. Two types of cladding are regularly furnished; oxygen-free high conductivity copper for special electrical applications, and phosphorous deoxidized copper for improved weldability. Other copper and copper alloys can also be produced in the form of clad steels.

Mechanical properties of copper-clad steel are governed by the type of backing steel used. Backing steel may be any of the plain carbon or low alloy steels of flange or firebox quality conforming to ASTM or ASME specifications.

The Copper-Clads can be sheared, formed or rolled according to standard procedures, the manufacturer points out. Uniformity of cladding thickness facilitates fit-up and aids welding.

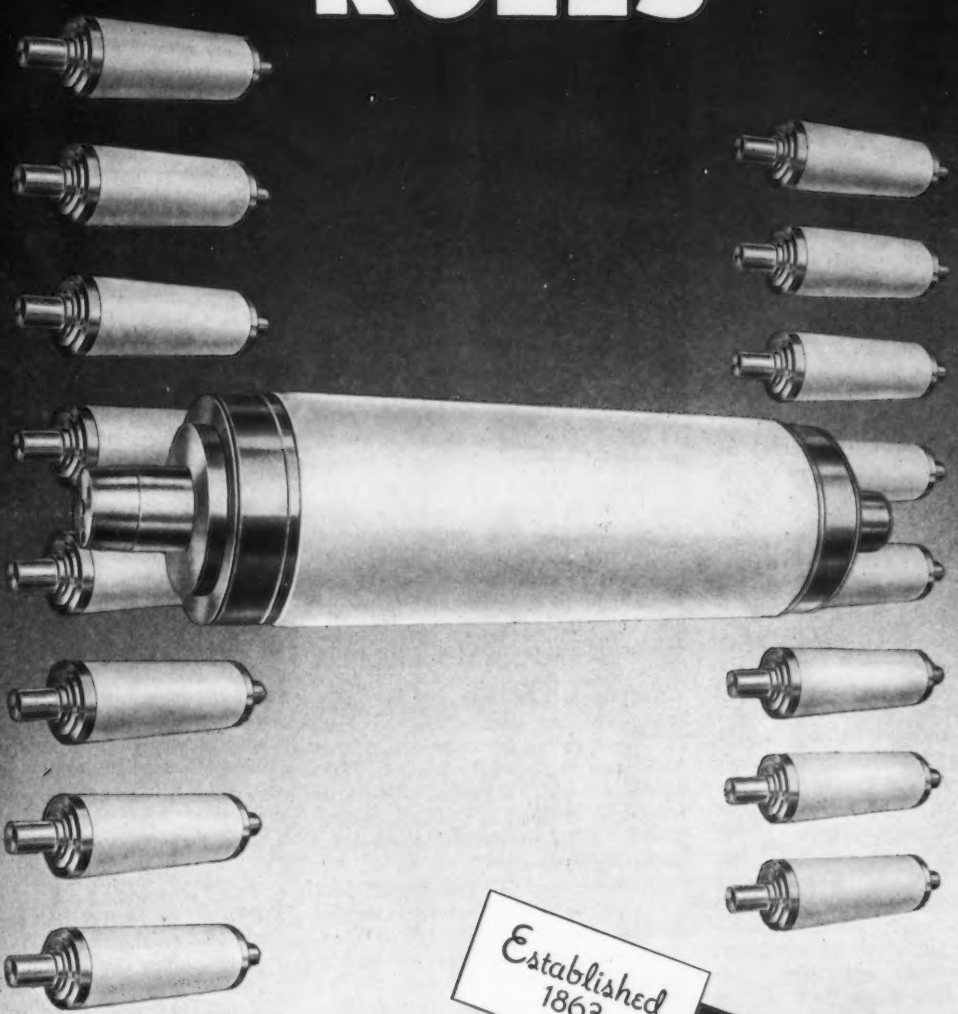


Wedge Connector for Aluminum Tube

A wedge-type connector for aluminum tube in sizes from ⅛ to 1 inch is the product of Oxford Fittings, Inc., P. O. Box 151, Birmingham, Mich.

(Continued on page 34)

"HOLYOKE" CALENDER ROLLS



Established 1863

HOLYOKE MACHINE COMPANY

CALENDER ROLLS for the PAPER and TEXTILE INDUSTRIES
WATER FILTRATION EQUIPMENT
HOLYOKE, MASSACHUSETTS

Fred Matheis

Assistant Vice-President, Thermoid Co.,

Trenton, N. J., Gives Some Points on the

Selection and Maintenance of Rubber Conveyor Belting

Belt Construction

There are many different types of conveyor belts available today for a wide variety of both standard and special service but all belts have a similar construction consisting essentially of carcass and cover. The belt carcass is made up of one or more plies of cotton fabric duck in which the lengthwise (warp) threads are woven over and under the cross (filler) threads, thus giving a distinctive elastic quality in the direction of travel. The warp threads provide the primary strength of the belt. Duck is specified by the weight per linear yard (42″ width) such as 28 oz., 32 oz., 35 oz., and 45 oz. When belting is subjected to severe flexing conditions, a thin sheet of rubber between the plies, known as a "skim" is advantageous. Covers for conveyor belt are compounded of natural and synthetic rubber stocks together with other ingredients which vary according to the service for which the belt is intended. The smooth rubber surface that is normally used, is furnished in various thicknesses to resist abrasion, heat, cutting, and gouging. For severe service, a breaker strip is inserted under the cover. This is a ply of open mesh fabric, which increases cover adhesion for maximum resistance to cover separation. Although each ply of the belt carcass usually extends completely across the width of the belt, a special type is available which is known as step-ply construction. The belt thickness is uniform but a thicker layer of rubber is provided in the center and additional duck plies at the sides. This construction is to be considered when there is extreme wear in the middle of the belt as is found in handling abrasive materials.

Usually, in industrial plants the top cover is thicker than the bottom cover because the top cover sustains the most wear but there is a trend today toward use of thicker covers on the bottom in severe, abrasive service to cope with bottom cover wear.

Although a smooth surface belt is accepted as standard in the wood pulp industry it may be of interest to know about some of the special belts that are available. The jobs done by standard and special belts in all types of industry is amazing and new belts are constantly being designed to handle new tasks. The canning industry uses a belt with a special, white, acid-resistant cover which does not impart odor or taste to food in canning factories. This belt can easily be cleaned to prevent accumulation of food in the pores of the belt.

Another belt is made for operating in temperatures from 270° F. to 350° F. The carcass is composed of specially-treated glass fabric and the carcass is incased in a special heat-resistant fabric envelope. A ply of asbestos is added under the cover for additional insulating properties.

The Thermoid Co. recently designed a rubber conveyor belt for cooling hot cans of pineapple. The belt is characterized by alternately projecting lugs molded integrally which cause the hot can to tumble, as well as roll, in a stream of cold water.

We make a special bare-back belt for conveying bread. Rubber "skims" are used in the carcass but the covers are bare, white, cotton duck without any rubber covering.

"Ruff coat" belting is characterized by a surface with thousands of gripper points of irregular shape which prevent back-slip when conveying cartons, boxes and packaged materials up an incline.

The belt conveyor has transverse grooves molded into the cover for carrying short round parts such as rods and bolts.

In a citrus fruit packing plant, low production and illness amongst sorters around a conveyor belt was traced to the belt color. The discoverer, Dr. McClelland, came to Thermoid suggesting that the cover color be changed to peach. Now, several "eye-easy" colors are available for conveyor belt covers.

In the "flanged" belt the edges are built up to prevent material from falling off. The type of belt is often made in "eye-ease" colors for fruit packing plants.

In cases where long belts are required by special conditions, rayon duck or rayon cord can be used in the carcass for extra tensile strength instead of cotton. In rare instances steel wire or cable is used for extra strength where the center to center distance of pulleys measures thousands of feet but steel-cable belts are almost prohibitively expensive.

Belt Selection

Type

To choose the correct *type* of belt from the many constructions available, consider first the size, density and sharpness of the pieces of material. Large pieces of heavy rock in sharp fragments will require a belt with a thick cover, breaker strip and several plies with skims. Light, fine material can be moved on a less rugged belt.

Allow for extremes of temperature of both material and working environment. Belts for both hot and cold materials and climates can be produced.

Moisture content of the material is important. Wet mixtures take a different belt than dry ones.

Material in fine sizes, if abrasive, may require a heavy cover in spite of the small particles. Belt color is important in some industries. Consider specifying special molded covers for handling standard parts in manufacturing plants.

Width and Number of Plies

The size of the belt is dependent upon the rate at which the material is to be moved, the distance, horsepower required to move the loaded belt.

In general, the wider the belt, the greater the cost. It is axiomatic that for a given tonnage per hour, the faster the belt travels, the narrower the belt required. However, the faster the belt runs, the more often it will pass the loading point and the greater will be the wear and maintenance. So it does not pay, in the long run, to save on the first cost of conveyor belting by running a narrow belt at high speed. And, conversely, the capital cost of belting will be excessively high if a very wide belt is run at relatively slow speeds. A break-even point should be calculated in which a great many factors must be accounted for. For example, a high-speed belt requires more expensive rollers. On the other hand, a wide, slow-speed belt will take longer rollers which may be just as expensive. The high-speed rollers will require more attention after installation. Fortunately, there are many tables, formulae and standard practice guides to assist the design engineer in making his choice.

A well-proportioned belt has enough plies to support the load and withstand tension. It must be flexible enough to trough and bend over pulleys without excessively stressing the belt. In general, the minimum ply belt to support the live load also satisfies tension requirements. On flat travel over short distances, the belt operates below tension capacity. Refer to manufacturers' manuals for tables and formulae in choosing a well-proportioned belt.

Prolong Belt Life

1. Reduce Belt Wear

Edge Wear

The edges of a belt are carefully sealed in manufacture to prevent moisture from getting into the belt. Excessive edge wear destroys the edge seal. Water will then attack the carcass causing mildew and rot. If the water freezes, the ice particles will rapidly destroy the belt.

Edge wear is considered by many specialists to be one of the chief causes of short belt life, and misalignment is a large factor in edge wear. It is absolutely essential for long belt life that the belt carriers be correctly aligned.

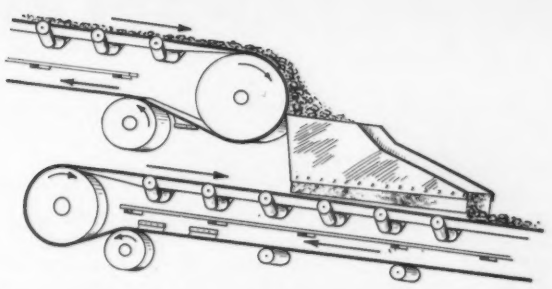


Figure 1—Correct loading conditions. Drop from belt to belt is minimum. Adequate number of idlers around chute prevent "spanking" or "chattering" of belt which might let material escape under skirt boards. Length of skirt boards is sufficient to settle material. Skirt boards are of flexible material with space between belt and boards increasing in direction of travel.

It generally pays off in terms of increased belt life to take considerable time and trouble to secure as close to perfect alignment as possible. Many installations are aligned with a transit. Reducing edge wear usually means a reduction in power requirements.

It is becoming standard practice to compensate for excessive edge wear by cutting off the worn edges before the belt has completely disintegrated and using the reclaimed, narrower belt in less severe service. New liquid neoprene compounds are available for sealing the newly formed edges against moisture. Liquid neoprene is also useful in building up worn spots in the cover to prevent more extensive repairs later.

Skirt boards are another primary source of edge-wear. Construction and placement must be carefully engineered by qualified personnel. The use of jerry-built, "baling wire" contrivances should be avoided. Fasten shirt-boards firmly so that they will not eventually loosen and drag on the belt.

Loading Impact

Loading conditions are a prime factor in belting deterioration. The loading point is a danger zone. Both existing and proposed installations should be regarded with the intention of creating "ideal" loading conditions.

One of the basic requirements for long belt life is that the material fall on the belt while moving in the same direction and at the same speed as the belt *(Figure 1)*.

The material should be directed at the center of the belt, not toward one side. Material falling on the left side will make the belt ride out toward the right and vice versa. As a result, the belt will not train properly and will rub against guard boards and training idlers, if used, increasing edge wear *(Figure 2)*.

When lumpy material is being carried, an attempt should be made to have such material cushioned by a prelaid layer of fine material. A screen or "grizzly" at the bottom of the loading chute will satisfactorily deposit a layer of fines over the belting, thus providing protection against bruising. In some instances an oval or "fish tail" notch cut in the lip of the chute will aid in prelaying the fines.

At the same time, the velocity of loading-material flow should be controlled by pitching the loading chute properly. If this is not feasible, a baffle of iron or wooden bars should be constructed in the chute, *(Figure 3)* suspended from the top and free-swinging at the bottom, to reduce the velocity of material flow onto the belt.

In like manner, the vertical distance between chute and belting should be small to prevent excessive velocity of material which, in the case of lumpy material, might be great enough to cause belt damage.

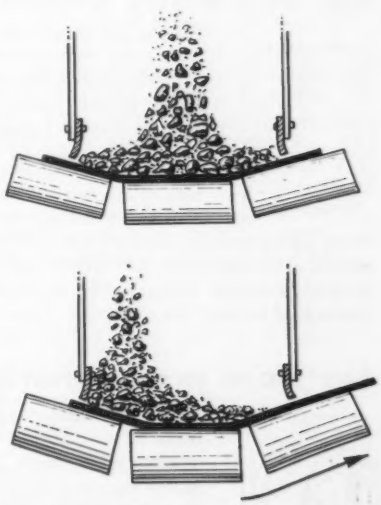


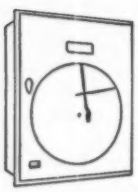
Figure 2—Top illustration shows correct loading on the center of the belt. Bottom shows what happens when loading is off-side. Belt rides up in opposite direction causing poor train, excessive edge-wear.

MEASURING FLOW FOR ALL INDUSTRY

THROUGH the arteries of industrial processes flow countless fluids. Whether they are used by the barrel or by the drop—their rate of flow is closely related to operating efficiency. For this reason, accurate measurement and control of flow have assumed high responsibilities in process supervision in practically every industry.

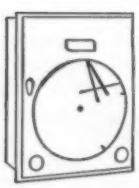
Because so many varied flow metering applications exist, Honeywell has developed several different families of instruments . . . each suited to a specific purpose. To work with these instruments, Honeywell engineers have designed meter bodies capable of metering the full gamut of industrial fluids, from viscous and corrosive to hot and high-pressure.

for flow accounting



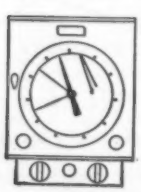
Cost accounting based on consumption of steam, water and other fluids is facilitated by the Brown Evenly Graduated Flow Meter. Its linear scale is easy to read at all flow rates. Its electronic integrator sums up total flow rapidly, accurately . . . is constructionally simple and easily maintained. This instrument is available as a mechanical meter with integral meter body, or as an electric receiver with remote transmission from a distant electric meter body.

for automatic control



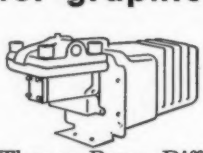
Where automatic flow control is the prime consideration, the Brown Square Root Flow Meter affords extra sensitivity by virtue of its expanded scale. It can be supplied with a wide selection of electric and mechanical meter bodies: low pressure, intermediate pressure and all-purpose; sealed armature type for corrosive materials. Interchangeable range tubes facilitate field change of calibration.

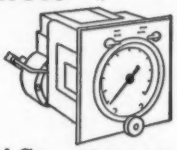
for flow proportioning



Many processes require that flows of two fluids be proportioned to each other—as, for example, fuel and air. For applications of this type, the *ElectroniK* Flow Meter combines many functions in one instrument case. It controls flow in the line which it is metering, resets its control index from a pneumatic signal transmitted to it from another instrument, and in turn retransmits the signal to a third indicator or controller. Cascade control of this sort holds temperature, air flow and fuel flow continuously in balance. The *ElectroniK* flow meter can be equipped with electronic integration . . . utilizes electric transmission from a remote meter body.

for graphic panels

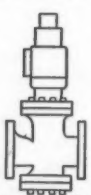




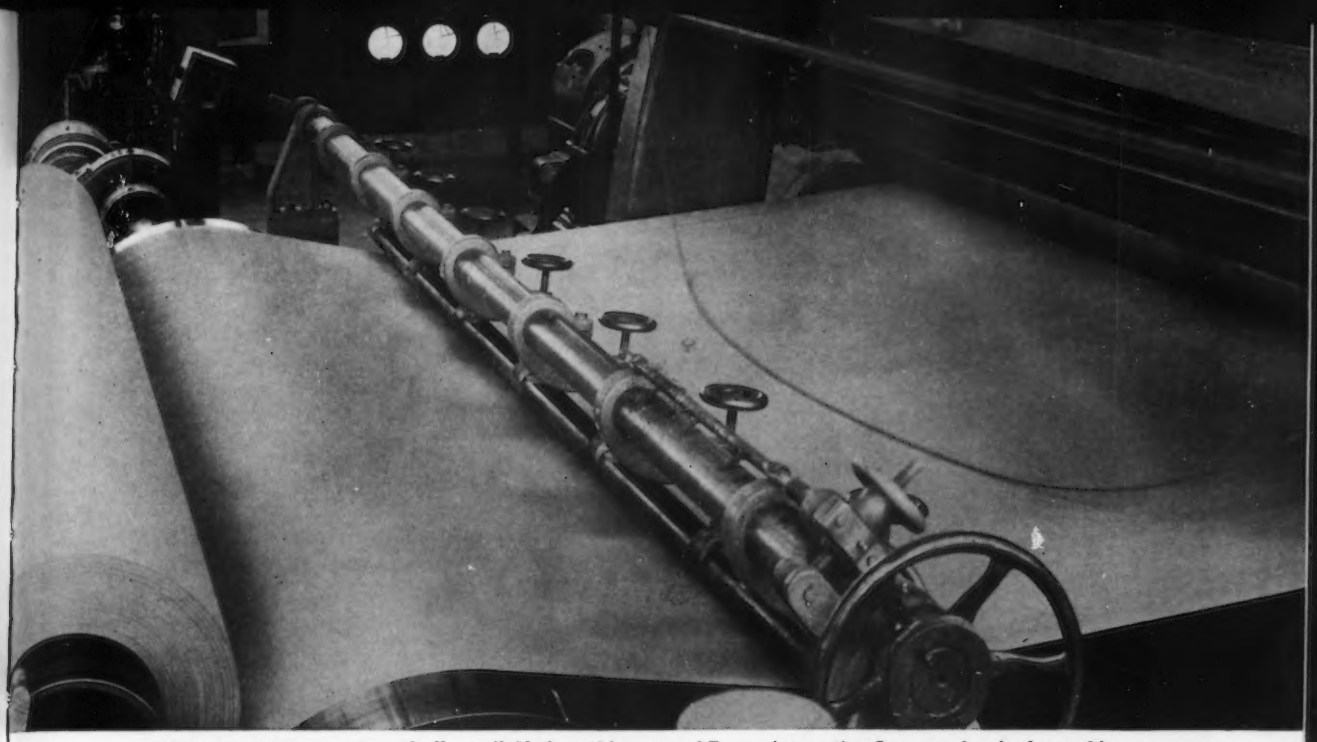
The new Brown Differential Converter operates on the pneumatic balance principle. Of sturdy construction, it uses no mercury, seals or strainers, is especially useful for metering corrosive fluids. It converts the measured pressure differential into a proportionate air output pressure, which actuates a remote flow-measuring instrument. Quick-responding and accurate, the converter is the ideal companion for miniature *Tel-O-Set* indicators, recorders and controllers. *Tel-O-Set* instruments are especially designed for top performance in graphic panel service . . . require only small panel space.

Modern processes demand

for viscous fluids



Flow of heavy oils, hot tar and other viscous liquids is readily measured by means of the Brown area type meter body. This unique device doesn't clog even with materials which would be difficult to measure by other methods. It transmits electrically to the remote meter, and produces a linear output which permits use of an evenly divided instrument scale.



FACTS ON COSTS *are automatically available from this group of Brown integrating flow recorders in the machine room of a large eastern paper mill. Each instrument meters steam fed to a particular processing operation.*

in the Paper industry

accurate flow control

BOTH for process control and for cost accounting, the flow of process fluids has vital importance in paper making processes. Water, steam, black liquor, green liquor, fuel oil, caustic . . . all these and many more require the accurate, sensitive metering that Brown instruments afford.

Whether the application is on digesters, evaporators, or recovery furnaces, you can find the correct flow instrumentation in the wide selection available from Honeywell. Black liquor, for example, is readily metered by means of the area type meter body. And for green liquor, the Differential Converter, which uses no mercury or seals, is the ideal answer.

For measuring flow in open channels—in waste disposal plants—float-actuated meters are available for use with Parshall flumes and weirs.

It will pay you to look to Honeywell for *all* your flow measuring and controlling needs. From this one source you can be sure of getting the right instrumentation for your processes . . . the experienced engineering to apply it to your mill . . . and complete service facilities available from more than 90 branch offices.

Your local Honeywell engineering representative is well qualified to recommend flow instruments for your plant. Call him today . . . he is as near as your phone.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4510 Wayne Avenue, Philadelphia 44, Pa.

MINNEAPOLIS
Honeywell
BROWN INSTRUMENTS
First in Controls

● *Important Reference Data*

Write for Composite Catalog No. 5000 . . . and for Catalog No. 2802, "Instrumentation for the Paper Industry."

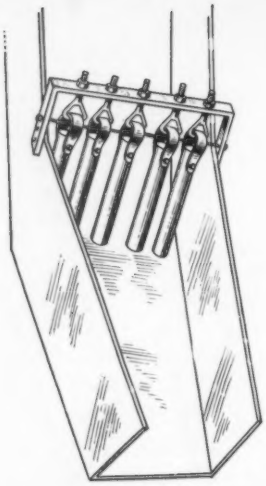


Figure 3—A simple device for preventing excessive velocity of material when conditions prevent more gradual slope of chute. Heavy metal (or wood) bars are suspended from the top and are free to move at the bottom. Large fragments hitting the bars are slowed down but not stopped.

Material should not strike the belt directly above a solid pulley because the resulting hammer-anvil action will quickly render the belting unusable. The chute should be located so that material will strike the belt between idlers. However, in cases where heavy material is being loaded, it may be necessary to load directly over rubber covered or pneumatic idlers.

In some cases, impact load between idlers will set up belt vibration. Resultant chattering may depress the belt sufficiently to allow material to escape under the skirt-boards. This may be prevented by locating the chute so that loading material will strike the belt far enough ahead of the tail pulley to allow insertion of at least one belt-steadying carrier pulley. Also, carrier pulleys should be more closely spaced around the loading zone because of the inpact loading of belt at that point.

Design Loading Chutes Properly

Construction of loading chute skirt-boards and flexible skirts should be carefully considered. Skirt-boards should not touch the belt but should be positioned slightly above the belt. They should be long enough to settle the material before it leaves the loading area. Flexible skirts are preferably improvised from rubber-covered edges of belting remnant. These remnants should be placed so that the rubber-covered edge is next to but not touching the belting. Should this be reversed, and the exposed-fabric edge of remnant placed against the moving belt, grit will collect in the fabric. Resultant abrasive action will, in time, wear a tract through the belt cover.

Vertical spacing between chute skirt-boards and belt should increase toward the open end of the chute. Thus the width of flexible skirts, as cut from a belt remnant, should decrease in the direction of belt travel. This construction minimizes spillage around the loading point. At the same time, wedged-in lumps of material will work themselves free by the forward motion of belting.

Belt Maintenance

Pre-installation

Belt maintenance begins even before the belt is installed. When received by truck or railroad from the manufacturer, it should never be dropped off but should be skidded, rolled or lifted. A large roll of belt will weigh several tons. A short computation will prove that several tons falling from a freight car will develop a surprising impact over the area of contact, enough to weaken the belt. If the belt roll falls on a stone, tool or track, a cut or puncture may result. If the belt is not installed at once, it should be stored, protected from sunlight, where it is not likely to be damaged accidentally.

Installation threading of the belt over the idlers and pulleys is critical and much belt damage may occur during installation. More than ordinary care and planning are needed. Avoid sharp bends. Minimize dragging over sharp rough surfaces. Don't twist sharply. Before belt is run, check for tools left accidentally on the return side. Don't use excessive tension in pulling the belt over the idlers and pulleys.

Maintenance Organization

Authority and responsibility for belt maintenance should be delegated to one man who with his assistants, checks lubrication, condition of idlers and pulleys, examines the belt for excessive wear, inspects splices at frequent intervals, repairs cuts and tears as soon as discovered, maintains a kit of belt repair tools. The belt maintenance boss should also check the belt for oil and grease which should be removed. Avoid over-lubrication of pulleys and idlers. In large companies using many thousands of feet of belting, a rather elaborate organization may be justified including a belt repair shop with both portable and permanent vulcanizing equipment, belt tables, drying racks.

Even in the best regulated plants, some material falls off the carrying surface of the belt onto the bottom cover or return side of the belt. If not removed, severe damage to the belt will occur when the belt travels around

Figure 4—Typical belt repair kit showing emery cloth, sharpening stone, cobbler's knives, rubber cement, sheet of patching rubber, cotton duck impregnated with rubber, belt fasteners, waste for cleaning, fabric pulling pliers, roller.

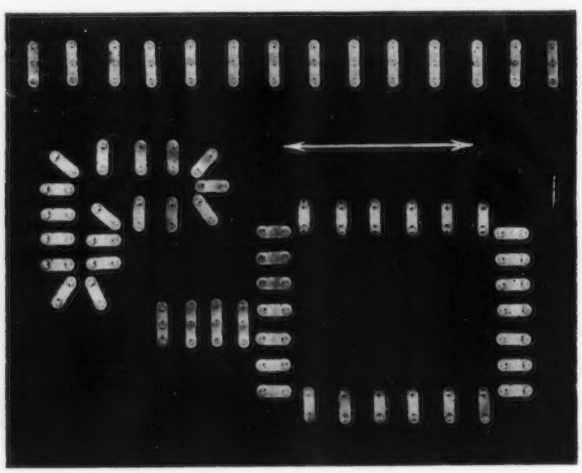


Figure 5—Rip plates have been used to repair longitudinal tear at top of photo. All others shown are fasteners, except four rip plates to left of large square patch.

WYANDOTTE
CHEMICALS
A call for Wyandotte Technical Service involves no obligation. It may be the means of adding a valuable sales advantage in better coating for one or more of your papers.

Art Radebaugh touches up a drawing depicting the future.

Can this whitest calcium carbonate, PURECAL M, help you sell more paper?

Art Radebaugh, an artist, tells requirements for good reproductions. Read how Wyandotte PURECAL M helps you meet them.

Art Radebaugh, famous artist whose drawings of the future are widely used in newspapers, magazines, books, and advertising matter, says, "Often, I've spent hours changing a job, not to improve the drawing, but to help it to reproduce better on a stock which was either off-white or would not take the ink well.

"You do not need high gloss to make a halftone of a good drawing stand out, but you do need a real white-white paper with a smooth, uniform surface and good inking qualities."

To paper makers

If you want to get the finest finish for your paper, whether for offset or letterpress, use Wyandotte PURECAL* M. It is a pigment of highest purity for paper coating. Because Purecal M is always uniform in quality and in particle size, free of grit and other abrasives, it insures a uniform, smooth coating of high whiteness and hiding power.

A sales suggestion

If your coated papers contain PURECAL M in the coating medium, pass this information along to your sales force. If you are not using it and would like to investigate its possibilities, write us for full application data. *Wyandotte Chemicals Corporation, Wyandotte, Michigan. Offices in Principal Cities.* *Trademark

Wyandotte CHEMICALS

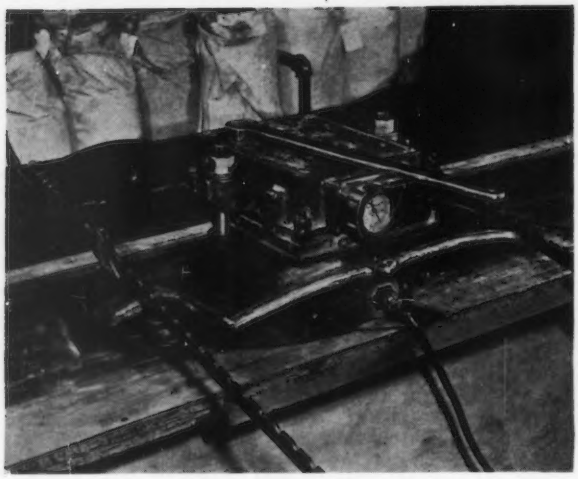


Figure 6—Portable vulcanizer. Top half bolted to bottom with belt between. Old belt in front serves merely to support part of vulcanizer not in contact with repaired spot.

Figure 7—Section of belt to be removed is carefully marked out on top cover with a square (parallel and at right angles to the edge.) Section should be large enough so that final square, after cutting out squares of decreasing size through several plies, will completely encompass damaged area.

the pulley and the misplaced pieces are squeezed between belt and pulley. Brushes and scrapers are often used but the best solution to the problem is to completely cover the return side of the belt with a wooden or metal deck.

When a permanent installation is made out-of-doors, it will probably pay to cover the belt with a wooden or steel structure. This will keep off direct sunlight which speeds up oxidation, another enemy of rubber belt. One company has covered a wide belt with a continuous Quonset hut which is heated in winter.

Belt Repairs

In order to get the maximum service life out of conveyor belting, users should take particular care to repair all belt damage as soon as it is discovered.

Belt fabric exposed to weather will absorb moisture if the protective cover becomes damaged, and may even become soaked. In warm weather, this condition leads to mildew and rot; in winter, ice crystals may gnaw at the fabric from within as the belt flexes. Thus, immediate repairs not only prevent the spread of damage, with its threat of premature failure, but also keep out the water which is the natural enemy of the conveyor belt carcass.

Simple tools and procedures will help the maintenance man to give belting proper attention. An adequate repair kit includes sharp cobbler's knives and a stone to keep them sharp; a supply of emery cloth, rubber cement, inner tube patching rubber, rip plates and standard belt fasteners and accessories, together with rags and gasoline for cleaning. *(Figure 4)* As each belt is installed, remnants should be saved, because they will prove useful in subsequent repairs.

To mend long and deep cuts which go through to the fabric, open the cut, clean out all dirt, and cement the cut closed, allowing the cement to dry thoroughly before the belt is restored to service. Where bits of torn cover leave exposed spots with only slight damage to the fabric, remove the loose ears of cover stock by carefully cutting a curved and bevel-edged area

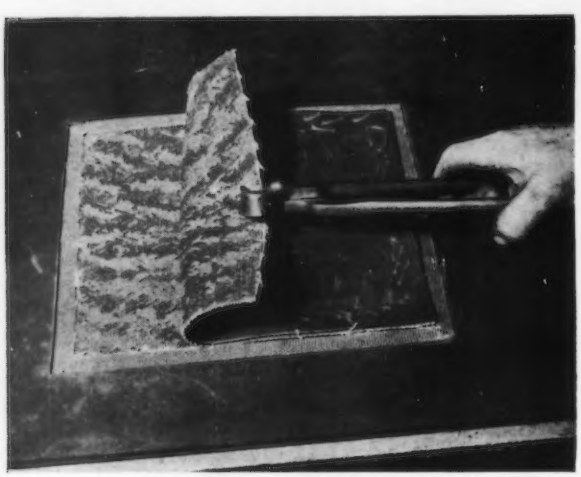


Figure 8—Belt pulling pliers are used to pull off the first ply with adhering cover.

Figure 9—Remove progressively smaller blocks of fabric with each successive ply. Squares to be cut should be marked out indenting about ½", being careful to keep incisions parallel to and at right angles to the edge. Then the belt is turned over and the bottom cover is pulled off in a strip about 2" wide. Be sure the cavity is dry, then apply cement. Squares of rubber impregnated fabric are cut to fit each layer until the cavity has been refilled. Uncured rubber of same thickness and composition as the original cover is cemented in and rolled flush. The patch is then vulcanized.

which one?

There are a lot of conflicting claims about which type of anti-friction bearing is best. Actually, each type has its advantages. The problem is to decide which is best for the job at hand.

Torrington makes every basic type of anti-friction bearing. Our engineers know the relative advantages of each and have accumulated a fund of experience in their applications. Leading builders and users of mechanical equipment have learned to rely on Torrington for impartial recommendations.

Next time *you* are selecting anti-friction bearings, let us know. We will be glad to work with you.

THE TORRINGTON COMPANY

South Bend 21, Ind. Torrington, Conn.

District Offices and Distributors in Principal Cities of the United States and Canada

TORRINGTON BEARINGS

Spherical Roller • Tapered Roller • Straight Roller • Needle • Ball • Needle Rollers

around the spot; then sand the edges apply the patch flush with the belt cover.

Where gouges have penetrated the belt, or longitudinal rips have occurred, these points must be cleaned, sanded, cemented and reinforced with rip plates at three-inch intervals. Transverse rips require similar treatment with standard belt fasteners instead of rip plates. Use rip plates on longitudinal rips only, and standard fasteners on transverse rips only. *(Figure 5)* When holes in the belting do not permit the simple use of rip plates and fasteners, cut out the hole into the smallest possible rectangle with its sides parallel to and at right angles to the belt edges. Then, from belting remnants, cut an exact fit for the hole and insert the piece, fastening it with belt fasteners all around the patch. Cement all edges thoroughly. Where it is necessary to prevent seepage of fines through belt repairs, remove one ply of fabric from a belt remnant and place it under the fasteners and rip plates. *(Figure 7)*

Vulcanized patches are superior to those described above, but require the addition of a portable vulcanizer, *(Figure 6)*, rubberized fabric, tie gum, cover stock, a one-ply knife and fabric pliers. In preparing a vulcanized patch, work down into the damaged belt as far as necessary by removing progressively smaller blocks of fabric with each successive ply. *(Figures 7, 8 and 9)*, Clean, roughen and cement the cavity, neatly fit in blocks of new fabric and finally apply the uncured cover. Skive the edges of the patch flush, and vulcanize. Such patches cannot be made succesfully unless the belt is dry, because the presence of moisture will permit the development of internal steam blisters. For this reason, large users have drying racks in their maintenance shops. Only very large users of conveyor belting will find it economical to vulcanize their own belt patches and splices. Small users may call on the manufacturer or his distributor for splicing and repairs.

Department of Commerce Studies Bagasse As Newsprint Source

On Thursday, October 2, the Celler Committee of the House of Representatives convened to hear the Department of Commerce report on their bagasse study. The objectives and summaries were as follows:

1. That since the present expansion goal has not been met to date the Department of Commerce will, on behalf of the Government, explore the obstacles which have thus far militated against additional newsprint expansion in the United States.

2. The Department will consult with present producers in the field as well as with potential producers, including producers seeking to enter newsprint production via new techniques and processes such as bagasse, hardwoods, et cetera, with a view to obtaining new newsprint facilities which will fulfill our expansion goals.

3. In order to obtain accurate scientific and technological data upon which to appraise the value of new techniques and processes, the Department will obtain the cooperation of the Bureau of Standards and other appropriate laboratories to make definitive tests which may then provide a sound basis for future policy decisions regarding these technical innovations.

4. The Department of Commerce will, at the same time, discuss with publishers and representatives of publishers' groups to obtain and coordinate whatever aid and assistance the latter are able to proffer in expanding domestic newsprint production.

5. The Department of Commerce will likewise confer and coordinate its efforts with the activities of other Government agencies which may be concerned with the various aspects of obtaining new production such as financing, priorities, amortization, et cetera.

The purpose of the present report is to inform the subcommittee as to the progress of the work undertaken pursuant to the above program, to summarize the significance of the results to date, and to indicate the lines along which further inquiry appears to be needed.

During this initial period our activity has been divided into three main parts:

A. Consulting with private industry and Government agencies to determine the extent of expansion of newsprint production already planned or under way in the United States, and obtaining the viewpoints of private industry and Government agencies as to the obstacles impeding further expansion at this time.

B. Surveying the status of research, development, and technology in the United States and abroad as to the utilization of raw materials—including sugarcane bagasse, hardwoods, and waste paper — not now used to a significant extent in the manufacture of newsprint.

C. Conducting an independent investigation as to the feasibility of making satisfactory newsprint from sugarcane bagasse on a pilot scale by already existing processes, and studying the economic considerations affecting the use of bagasse as a raw material for newsprint production.

The following specific activities are indicative of our general approach in carrying out the initial phase of the program.

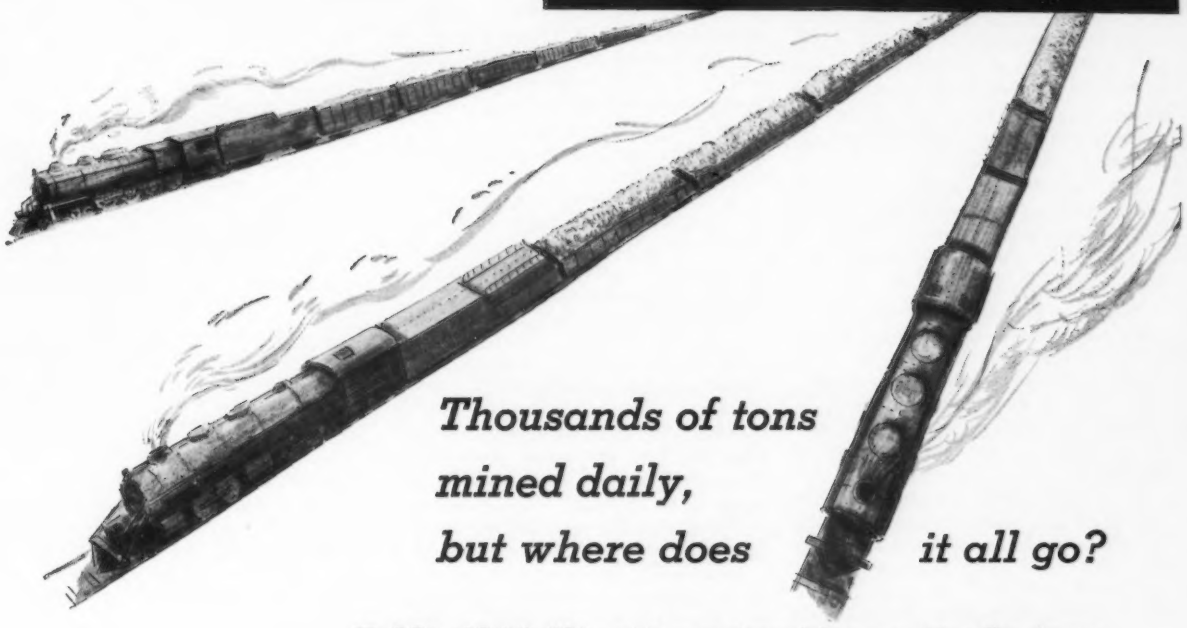
1. Formed an interagency advisory group under the sponsorship of the Department of Commerce to coordinate views and studies of the executive branch in connection with expansion of newsprint production.

2. Convened, under the auspices of the National Production Authority, two industry meetings: (a) An industry advisory conference of all existing newsprint producers in the United States, plus three prospective producers; and (b) A special meeting of the Newspaper Industry Advisory Committee consisting of representative newspaper publishers in the United States.

The purpose of both of these meetings was to obtain the views and judgments of private industry with respect to factors affecting expansion of newsprint production.

3. Conducted trials at the pilot paper mill of the National Bureau of Standards of the Department of Commerce, involving (a) the manufacture of newsprint from bagasse on a pilot scale by various processes, and (b) exhaustive physical testing of such

Sulphur



Thousands of tons mined daily, but where does it all go?

LOOK AROUND YOU and let your glance fall on any object. The chances are 1000 to 1 that sulphur played an important role in its manufacture, either as a component part of the finished product or as a processing element.

Take, for example, the very magazine you are reading. If it's average size it weighs about 1 pound. Made largely of sulphite pulp it required about 0.1 pounds of sulphur in its manufacture.

Multiply this 0.1 pounds of sulphur by the thousands of magazines turned out every day and you'll get some idea of the tremendous tonnage of sulphur required for this *single* division of industry . . . the sulphite pulp manufacture.

Sulphur has long been called One of the Four Pillars of Industry. Today's need emphasizes this fact more than ever. Sulphur producers are making every effort to get maximum production from existing mines and to develop new sources of sulphur as quickly as possible.

Texas Gulf Sulphur Co.

75 East 45th Street, New York 17, N. Y.

Mines: Newgulf and Moss Bluff, Texas

newsprint in comparison with standard newsprint.

4. Arranged for and completed the performance of tests by the United States Government Printing Office, for evaluating the printability of newsprint papers manufactured from bagasse in comparison with the printing quality of standard newsprint. Also arranged for printing a sample issue of The Congressional Record on newsprint made from bagasse.

The Chairman: "Have you examples of the Congressional Record made from this newsprint?"

Mr. McCoy: "Yes, they may be distributed."

The Chairman: "We should like to see them."

Mr. McCoy: "We have them here."

5. Convened a special panel of newsprint executives of leading newspapers to judge and evaluate the acceptability of newsprint samples made from bagasse in comparison with various samples of standard newsprint.

6. Arranged for and obtained special area studies as to supply availabilities and price considerations for bagasse originating in the United States, Hawaii, and Cuba.

7. Arranged for and obtained special economic and technical studies by the Forest Service concerning (a) availability of timber supplies for expanded production of newsprint, and (b) possibilities of utilizing hardwoods and waste paper in the manufacture of newsprint.

8. Organized and dispatched a special Mutual Security Agency-Department of Commerce mission to study at first hand European developments in utilizing hardwoods in the manufacture of newsprint, with particular emphasis upon the technology and economics of the newsprint industry in Italy, where most of the timber going into newsprint consists of hardwoods.

9. Conferred with prospective producers actively interested in using hardwoods and waste paper for newsprint manufacture in the United States.

10. Compiled and reviewed data concerning availability of timber in Alaska for newsprint production and studied economic conditions and Government policies affecting feasibility of such production.

Summary of results:

The principal findings and conclusions suggested by our efforts to date may be summarized as follows:

The views of private industry:

1. Expansions of capacity undertaken by the domestic newsprint industry since mid-1950 totaled 375,000 tons and involved a total investment of about $110 million. All expansion projects have been granted accelerated amortization at the rate of about 45 percent. The expansion undertaken to date falls about one-fourth short of the defense expansion goal established by the Government. No further expansion projects to fill this goal have been submitted by newsprint producers.

2. The reluctance of newsprint producers to undertake further expansion at this time is attributable to (a) inadequacy of available supplies of softwood timber—the principal raw material now used for newsprint—to permit substantial expansion of newsprint production in the United States, and conservatism as to the feasibility of utilizing alternative raw materials; (b) high investment costs for the acquisition of necessary timberlands and construction of new mills and the competitive disadvantage of new ventures in comparison with existing facilities built at lower costs; (c) higher profitability of other grades of paper in relation to newsprint resulting in a diversion of available capital and raw materials away from newsprint to such other grades.

3. Some newsprint producers are of the opinion that available supplies of softwoods could be substantially increased and newsprint production thereby expanded by modifying Government policies which now prohibit the cutting of timber in the Olympic National Forest in the State of Washington and the importation of logs cut from the Tongass National Forest in Alaska. Present regulations require that the first processing of logs cut from the Tongass Forest must be performed in Alaska. The Newspaper Industry Advisory Committee of the National Production Authority has recommended that a study be made of the possibility of utilizing such sources of timber for the production of forest products, including newsprint, under proper restrictive safeguards which would assure the perpetuation of the natural resources.

4. Newspaper publishers have investment participation in a number of existing newsprint mills in the United States, including the two large newsprint mills in the South. The Newspaper Industry Advisory Committee of the National Production Authority, which is made up of representative large and small newspapers from all sections of the United States, is of the opinion that newspaper publishers would provide reasonable amounts of equity capital to start new mills. While capital investments in other paper products are said to provide a better financial return than newsprint, the committee generally believes that publishers would invest in newsprint mills if the raw material for newsprint production were available.

5. The Newspaper Industry Advisory Committee is of the view that all of the output of the expanded capacity which is under way will be absorbed in the market regardless of newsprint conservation programs, rising prices, or any other considerations. Committee members urge that the expansion goal be enlarged when and if specific applications are filed in excess of the present goal, and that no person who wishes to enter the newsprint production field be deterred from doing so because of the fact that the planned goal has been reached.

6. While the newsprint industry generally opposes Government financial assistance in the form of subsidies, several producers are of the opinion that the privilege of applying for Reconstruction Finance Corporation loans or rapid tax amortization certification should continue to be available to those companies which wish to exercise it.

Utilization of bagasse for newsprint production:

1. On a pilot scale, using equipment which is standard to the art, it is technologically feasible to manufacture from whole bagasse a paper which is satisfactory in all significant respects, and superior in some, for use as newsprint.

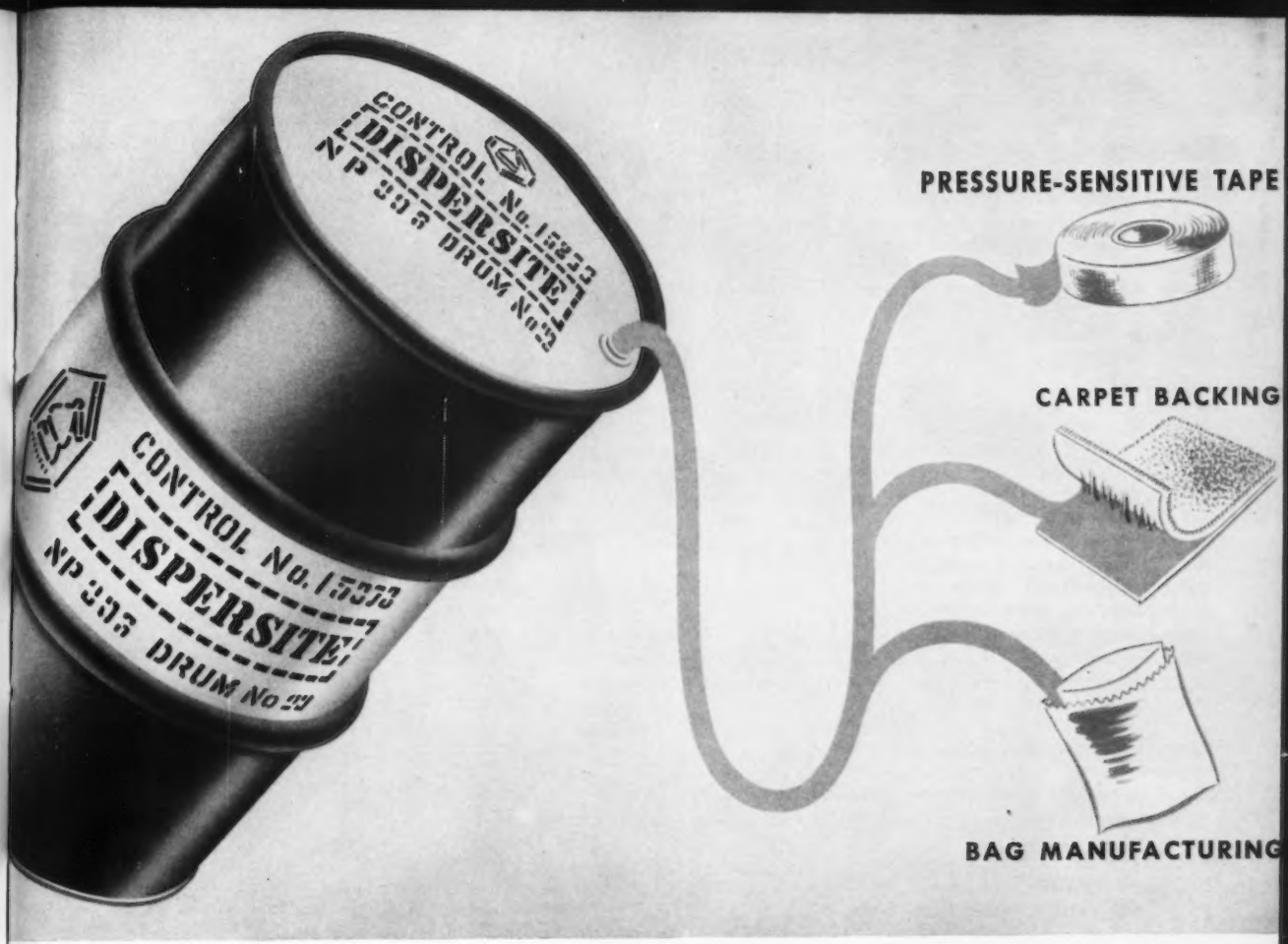
2. On a pilot scale, total costs of manufacturing newsprint from whole bagasse, including raw material costs, are in line with production costs for standard newsprint.

3. Of the various newsprints manufactured from bagasse on a pilot scale by the National Bureau of Standards during these trials, the best results were obtained by using the De La Roza process. Other processes also show potentialities for successful development.

4. Bagasse could also be used economically as a source of chemical pulp, or as a blend with other pulps, in the manufacture of high-quality newsprint.

5. Because of the superior strength and other characteristics of the fiber compared to groundwood fiber, bagasse is also suitable for the production of other types of paper, particularly higher grade papers, perhaps most economically in combination with the manufacture of newsprint.

6. The above conclusions are necessarily based upon experience on a pilot scale. Certain technical details which cannot be adequately determined on such a scale must be subjected to commercial conditions before it can be determined with finality that these conclusions apply equally to commercial scale operation. Two matters requiring conclusive demonstration in order to eliminate any uncertainty as to economic practicability are (1) the maximum speed at which newsprint from bagasse can be made on a stand-



For adhesives that hold—*it's Dispersite®*

Whatever you bond, you can be sure your adhesive will stick to its job—with Dispersite. These dispersion adhesives of reclaimed rubber or other elastomers have both the tackifier and reinforcing material within the latex particle—provide more uniform tackiness and smoother, stronger adhesion.

Specially developed by Naugatuck Chemical—the pioneer and leader in fine latices—Dispersite offers manufacturers many distinct advantages. Applied by roller, spraying, dipping, or brushing, Dispersite is fast-drying—forms a tough, flexible film with exceptional tackiness, good mechanical stability and excellent aging properties. It retains its adhesive properties over a wide temperature range. And, since Dispersite is a water dispersion, it eliminates the danger of fire.

Modifications of Dispersite make it ideal for use as a saturant or size for carpet backings, for bonding or coating textiles and fibers such as jute or felt, and for a variety of dipping applications. **For further information on Dispersite, or for expert help on any bonding or coating problem, write to the address below.**

NAUGATUCK DIVISION OF UNITED STATES RUBBER COMPANY *Chemical*

1410 ELM STREET, NAUGATUCK, CONNECTICUT

BRANCHES: Akron • Boston • Charlotte • Chicago • Los Angeles • New York • Philadelphia • Memphis • **In Canada:** Naugatuck Chemicals, Elmira, Ont.

Rubber Chemicals • Aromatics • Synthetic Rubber • Plastics • Agricultural Chemicals • Reclaimed Rubber • Latices

ard paper machine, and (2) the maximum speed at which such newsprint can be printed on a typical newspaper press.

7. It is technically and economically feasible to store bagasse for indefinite periods of time. The sugarcane grinding season is about 2½ months in Louisiana and about 6 months in Florida and Puerto Rico. Year-round availability in these areas presents no difficulty; when properly baled, treated, and stacked, bagasse can be kept for several years without significant loss. In Hawaii the cane-grinding season extends throughout most of the year, thus requiring little or no storage for the bagasse produced.

8. Almost 1 ton of newsprint can be made from 2 tons of bagasse. While the United States is not a major sugarcane producer, ample quantities of bagasse are annually available in Louisiana and Florida to support at least two newsprint mills of economic size utilizing bagasse as a raw material. Even greater quantities of bagasse are available in Hawaii and Puerto Rico, which together produce about three to four times as much sugarcane as the United States. Still greater supplies are available in Cuba, which alone produces two to three times as much as the United States and its Territories combined. On a world-wide basis about 25 million tons of bagasse are produced annually, with the United States and its Territories and Central America accounting for roughly one-half of the world total. Utilization of this tremendous potential supply depends upon economic conditions in each locality.

Summary of further investigations that appear to be required:

In order to further the program undertaken by the Department of Commerce pursuant to the inquiry of this subcommittee, the following additional investigations are necessary:

1. Bagasse:

(a) The feasibility of forming bagasse newsprint on a standard paper machine at commercial speeds and of printing such newsprint on a standard newspaper press at economic press speeds should be determined by actual test runs on such equipment.

(b) The economic factors affecting availability of bagasse in the United States and its Territories for newsprint production should be more thoroughly studied to determine possible economies in raw material costs, including treatment, storage, baling, and transportation costs.

(c) Further study is also required, both from the standpoint of potential newsprint expansion and the economics of the areas affected, in order to determine the economic practicability of drawing upon bagasse supplies in Cuba and other nearby sugar-producing areas, and the full significance of bagasse availability in major sugar-producing countries of South America and the Far East for paper manufacture, including newsprint.

2. Hardwoods:

Technological developments concerning the utilization of hardwoods in the manufacture of newsprint offer considerable promise. Commercial application of these developments is not as far advanced in the United States as it is in some other countries. The technical and economic feasibility of extending hardwood utilization on a large scale as a means of expansion of newsprint production in the United States should be thoroughly investigated.

3. Waste paper and other materials:

Considerable developmental work in the use of de-inked waste newspapers and other fibrous materials in the manufacture of newsprint is in progress. The technical and economic feasibility of substantially enlarging raw-material supplies for newsprint production by this approach should be ascertained.

4. Alaska:

The possibility of utilizing the vast timber supplies available in Alaska for expansion of newsprint production, without impairing either prudent resource policy or the sound economic development of the Territory, should be determined.

5. Olympic National Park:

The factors impeding access to the timberlands in the Olympic National Park should be carefully explored to determine the possibility of developing a program of sound logging operations which would not endanger national park policy and recreation objectives.

The report was presented by H. B. McCoy, Deputy Administrator, NPA.

The four proprietary processes which were used in the trial are H. L. Horn, Valite, De La Rosa and Kinsley Chemical Co. plus the more conventional wood pulping processes, modified for bagasse cooking.

NEW EQUIPMENT

(Continued from page 20)

Readily installed by any unskilled worker without special tools, special preparation of tube, gaskets or sealing compounds, the wedge fitting makes a tight, leak-proof connection and develops a stronger tube through controlled extrusion, the manufacturer states.

Connection is made by inserting tube into the collet of the new fitting, then tightening the collet nut with a wrench. Collet is thus compressed into the tube wall and the tube metal displaced forward to fill the space ahead of the collet position. Thus solidly supported, failure from vibration is eliminated, it is pointed out; the tube is not weakened by thinning and chipping; and there are no internal spaces where moisture can form, freeze or corrode.

Dispersator

Premier Mill Corp., 218 Genesee street, Geneva, N. Y., has introduced a mixing device that is designed to create maximum turbulence and contact between various phases.

Known as the Premier Dispersator, the unit is held suitable for many applications in the paper industry, including the preparation of pigment and clay coatings; water slurry; casein base coatings; clay fillers in adhesives and water base; wax and gelatin coatings, sizes and glazes; gum coatings for labels, tape, etc.; coatings for waterproof wrapping paper.

Essentially, the device consists of a slotted cylinder rotating at high speed. The centrifugal force resulting from the rotation causes the product to pass outwards at considerable velocity through narrow slots situated in the cylinder wall. The effect is two-fold. First, the product is sheared at high speed as it passes through the slots and, second, the layers of liquid emerging from the slots cause the major shearing as contact is established with the relatively slower-moving mass of liquid in the mixing vessel. Thus, conditions of extreme turbulence are produced and close contact between particles of the mixture is made and maintained.

Developed to process liquids, solids and gases throughout a wide range of conditions, the device is available in laboratory, development, pilot plant and production sizes.

Particle Size Table and other bulletins sent on request.

INCREASED EFFICIENCY in the building of high-speed, high-production paper machines is one result of the major expansion program at Beloit Iron Works. On the floor of the large dryer shop recently completed, Gaston Bertrand, Russ Goodwillie and Francis Ramsden (*left to right*) watch a dryer head being machined to close tolerances on a 62″ boring mill.—*Beloit Iron Works, Beloit, Wisconsin.*

BELOIT

PAPER MACHINERY

WHEN YOU BUY BELOIT... YOU BUY MORE THAN A MACHINE!

HAM FELTZ says:

The water goes through BETWEEN the woolen threads...

Yes, I've seen those Hamilton people begin with a mass of dirty wool, right from the backs of sheep. They wash it clean and card it as straight as string and as fine as cobweb. Then they spin it into yarn, soft and strong, without knots or kinks.

From the spindles this woolen yarn travels to the looms. The shuttles fly from side to side, sometimes as much as fifty feet, to weave the fabric for Hamilton Felts. With a magnifying glass you can see the open spaces between threads.

The number, size and shape of these open spaces determine how fast the water can be squeezed out by the nip of the press. The more water you remove at the wet end of your machine, the less you have to cook out at the dryers.

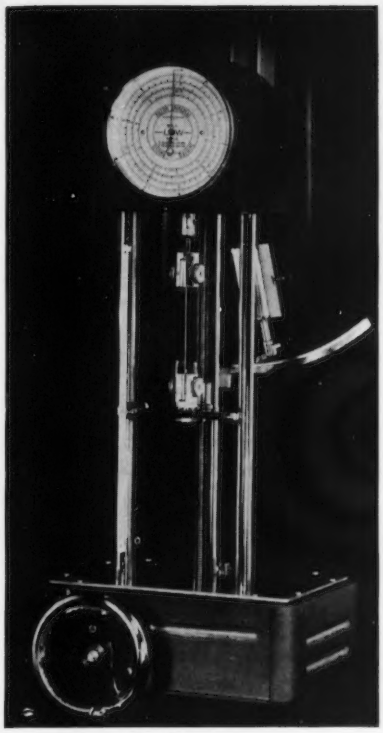
With more than 300 different styles from which to choose, the Hamilton Sales Engineer who contacts you may be in position to recommend a felt that will do your work better, faster and at lower cost.

Hamilton Felts

MIAMI WOOLEN MILLS

Established 1858

SHULER & BENNINGHOFEN, HAMILTON, OHIO



Hand-Operated Multi-Low-Range Tester

The hand-operated Multi-Low-Range Tester is the product of W. C. Dillon & Co., Inc., 1421 South Circle Avenue, Forest Park, Ill. Designed for test programs where it is desired to apply a load to specimens with extremely low speed yet be capable of being stopped instantly, the new tester serves both functions at a savings in price — since it does not require a variable speed drive or other electrical controls.

Unit is available with the following grip clearances: 14¾", 24", 36" and 48". The basic dial is calibrated with 4 individual scales broken down as follows: 10 lb. range with ½ lb. divisions; 25 lb. range with 1 lb. divisions; 50 lb. range with 2 lb. divisions; 100 lb. range with 5 lb. divisions. A supplementary dial is available, calibrated for 0-300 lbs. with 1 lb divisions. Accuracy of the instrument is manufacturer-guaranteed to within ½ of 1 percent to meet ASTM requirements.

A set of gripping fiixtures for flat specimens up to ⅛" thick by 1¼" wide is included with each unit. These can be quickly removed and replaced with a wide variety of other standard grips, which are available.

Maximum readings are held to be easily obtained since the pointer remains at peak load after a specimen breaks. It is reset by simply releasing the pendulum pawls. Elongation readings are provided by means of a special elongation scale and traveling hair line affixed to the moving platen. Tests can be made in tensile, compression, transverse and shear.

All-Steel Pillow Blocks

A new line of all-steel pillow blocks providing high load-carrying capacity in a compact and rugged package is announced by the Dodge Manufacturing Corp., Mishawaka, Ind., as a joint achievement by Dodge and the Timken Roller Bearing Company. High radial and thrust capacities and the stamina to take heavy-shock loads have been provided within minimum dimensions and with far less than usual weight, it is stated.

The bearings are fully self-aligning, with spherical outer race. They are available in both expansion and non-expansion types and have the adapter mounting which has proven so successful through the years. Double piston ring seals keep the lubricant in and dirt and dust out of the bearing mechanism. The bearings are sealed both on and off the shaft. They will be provided in shaft sies from 2-15/16" to 10".

Fully assembled, permanently adjusted, lubricated and sealed at the factory, they are shipped ready to install.

HANCHETT

KNIFE GRINDERS

TABLE DRIVEN • HYDRAULIC

FULL AUTOMATIC

ELECTRICAL

Speeds from 10 to 80 feet per minute.

Faster speeds if required.

Available with either Segmental or Cylinder Type Wheels.

Tell us your knife problems. Our engineers may have a money-saving solution for you

Write Dept. PTJ-102

HANCHETT GRINDERS BIG RAPIDS MICHIGAN

CAPACITY 32 to 184 inches

6K

Shown with special combination bar for doctor blades, paper knives.

OTHER MODELS:

DN For Light Production—32" to 108" knife capacity

AK Extra Heavy Duty 84" to 360" knife capacity

HANCHETT MANUFACTURING CO.

Main Office — BIG RAPIDS, MICH.
West Coast — PORTLAND 4, ORE.

PRICES

The prices below reflect market quotations in New York at the mill level on standard grades. Does not include spot offerings.

PAPER AND BOARD

Standard News, Delivered Ports

Rolls, contract, per ton	$116.00/$126.00
Sheets	138.00/ 147.50

Kraft—per cwt. 50# base wgt. OPS Ceiling CPR 88

F.o.b. Southern & Western integrated mills. C.l. Freight allowed up to $10 a ton.

Standard Wrapping, ctr. rolls	$7.75/ —
Butchers, counter rolls	8.25/ —
Standard Bag, mill rolls	7.50/ —
Shipping Sack, mill rolls	7.75/ —
Gumming, mill rolls	8.00/ —
Asphalting, mill rolls	7.75/ —
Envelope, Sub. 20, mill rolls	9.25/ —

Tissues—per ream 24x36 (480) 10 lbs. 2500 lbs.

Wh. No. 1 Frd.	$1.85/$1.90
Wh. No. 1 MG	1.85/ 1.90
Wh. No. 1½	1.50/ 1.65
Wh. No. 2	1.35/ 1.45
Kraft Anti-Tar 20-30	1.75/ 1.80
White Anti-Tar 20-30	2.20/ —

Toilet— per case of 100 rolls—1M sheets

Unbleached 4½x4½	$8.00/$8.25
Unbleached 4½x5, 650 sheets	6.65/ —
Bleached 4½x4½	10.00/12.50
Bleached 4½x5	9.81/10.14
Per Case of 50 rolls—2000 sheets	
Unbleached 4½x4½	$8.00/$9.75
Bleached 4½x4½	6.95/ —
Per Case of 100 rolls—1000 sheets	
Facial, 4½x4½, 2 ply	$8.95/10.37
4½x5, 2 ply	10.25/10.75

Paper Towels—per case of 3750

Wh. Jr. M'tif'd 9⅛x9½	$6.40
Br. Sr. M'tif'd 9⅞x12	4.40
Br. Jr. M'tif'd 9½x9⅞	3.90
Br. Jr. Sgl. fold 9⅞x10¾	3.95
C-Fold 10½ min. x 14 max.	5.90/ 6.64
Blchd. 7½x11, 48/50 rolls	6.80/ 7.92

Manila, per cwt.

No. 1 Jute Tag, 100-lb., sheets	$19.55/21.55
Reg. Jute M.F. 40-lb., sheets	18.50/20.50
Printing Manila	12.00/ —

Gummed Tape—per bdl., 500 bdls. or more

90-lb. 375 ft. GSI	$6.90/ —
60-lb. 600 ft. GSI	6.90/ —
35-lb. 800 ft. GSI	7.95/ —
35-lb. 500 ft. GSO	6.00/ —

MARKET WOOD PULP

Fourth Quarter Contract Prices, Per Short Air-Dry Ton

Delivered Basis — Varying Freight Allowances

	U.S.	Canadian	Swedish	Finnish	Norwegian
Groundwood	$82.50/ —	‡$60.00/ 85.00	$70.00/ —		$75.00/ — §
Sulfate, Bleached	140.00/147.50	145.00/155.00	140.00/142.50§		
Semi-bleached Sulfate	140.00/ — *		135.00/ —		
Sulfate, Unbl.	100.00/ —	100.00/125.00	$100.00/105.00§	$105.00/135.00	100.00/ — §
Sulfite, Blchd.	140.00/ —	140.00/145.00	140.00/ —	140.00/ —	140.00/145.00
Sulfite, Unblchd.	125.00/132.50	135.00/ —	115.00/ — §	120.00/125.00	115.00/ — §
Sulfite, Unbl'd (Glassine)	132.50/ —	139.00/ —	119.00/ — §		
Soda, Blchd.	140.00/ — *				
Sulfite Screenings	72.50/ — *				
Sulfate, Screenings	67.50/ — *			Delivered Basis	
Groundwood Screenings	60.00/ — *				
Unblchd. Sulfate Sideruns	132.50/ — *				
Stand. News, Sideruns	92.50/ — *				

* OPS Ceiling, CPR 49. ‡ F.o.b. Shipping Point. § On Dock Atlantic Ports.

Boards Deld., per ton (10 tons or over)

Filled News	$90.00/ —
Plain Chip	90.00/ —
Blchd. Mla. Lnd. Chip	140.00/142.50
White Pat. coated .020	160.00/162.50
Kr. Liner 42 lb. M sq. ft. $2.47	117.50/ —
Kr. Corr. .009 M sq. ft. $1.59	122.50/ —
Binders Boards	133.00/ —

The following prices are representative distributors' resale prices:

Rag Content Bonds and Ledgers—
White, 20 lb.

Bonds	4-Ctns. per cwt.
100% Rag. Ex. No. 1	$70.45/$75.90
100% Rag	62.65/ —
75% Rag	48.15/ —
50% Rag	38.90/ —
25% Rag	31.65/ 33.00

Ledgers	4 Ctns. per cwt.
100% Rag Ex. No. 1	$72.65/$72.80
100% Rag	63.90/ —
75% Rag	49.40/ —
50% Rag	40.20/ —
25% Rag	33.00/ 34.30

Sulphite Bonds and Ledgers
White, 20 lb.

Bonds	4 Ctns. per cwt.
Watermarked	$19.00/$20.50
Plain	18.40/ 19.50

Ledgers	4 Ctns. per cwt.
Watermarked	$20.30/$21.80
Plain	19.35/ 20.80

White Book

Conversion Coated	Case per cwt.
No. 1	$23.90/$24.65
No. 2	22.40/ 22.85
Machine Coated	
Extra No. 1	$21.35/$21.65
No. 1	19.15/ 19.65
No. 2	16.65/ 17.40
Uncoated	
No. 1 Antique (Watermarked)	$19.15/$19.65
Offset	18.15/ 19.15
A Grade E. F.	18.40/ 18.65
A Grade S. C.	18.90/ 19.15
B Grade E. F.	17.40/ 18.15
B Grade S. C.	17.90/ 18.65

‡ Indicates a price change.

WASTE PAPER MARKET

Prices to mills, per ton, f.o.b. cars shipping point (includes brokers' fee.) These quotations are a partial indication of the price range on volume tonnage in each market on the date specified, as gathered from major dealers. SPECIAL PACKINGS AND SPOT TONNAGE NOT INCLUDED. See TRENDS.

	New York Oct. 6	Philadelphia Oct. 2	Boston Oct. 4	Chicago Oct. 1
No. 1 Mixed Paper	$7.00/ 10.00	$7.00/ 10.00	$7.00/ —	$10.00/ —
No. 1 News	15.00/ 16.00	11.00/ 12.00	15.00/ —	15.00/ —
Over-issue News	20.00/ 22.00	20.00/ 21.00	12.00/ 14.00	18.00/ —
Mill Wrappers	7.00/ 8.00	10.00/ 12.00	13.00/ 19.00	13.00/ —
Corrugated Containers	17.00/ 18.00	13.00/ 14.00	18.00/ 19.00	20.00/ —
Double Kraft Ld. Corr. Cuts	35.00/ 45.00	30.00/ 37.50	25.00/ 40.00	35.00/ 40.00
100% Kraft Corr. Cuts	45.00/ 55.00	40.00/ 55.00	35.00/ 45.00	55.00/ —
Used Sugar & Flour Bags	35.00/ 45.00	30.00/ 37.50	25.00/ 35.00	30.00/ —
Super Resorted Br. Kraft	45.00/ 50.00	30.00/ 37.50	20.00/ 35.00	30.00/ —
New Br. Kraft Env. Cuts	70.00/ 80.00	70.00/ 75.00	55.00/ 65.00	60.00/ —
New Br. Kraft Cuts	60.00/ 70.00	60.00/ 65.00	45.00/ 55.00	55.00/ —
No. 1 Gdwd. Shvs.	20.00/ 30.00	20.00/ 25.00	28.00/ 30.00	25.00/ —
White Newsblanks	65.00/ 75.00	65.00/ 70.00	40.00/ 50.00	50.00/ —
No. 1 Flyleaf Shvs.	40.00/ 50.00	25.00/ 35.00	25.00/ 42.50	30.00/ —
No. 1 Soft Wht. Shvs.	75.00/ 85.00	65.00/ 70.00	75.00/ 85.00	75.00/ —
Super Soft Wht. Shvs.	85.00/ 95.00	70.00/ 75.00	95.00/100.00	85.00/ —
Hd. Wht. Shvs.	95.00/100.00	90.00/105.00	85.00/100.00	90.00/ —
Hd. Wht. Env. Cuts	115.00/125.00	110.00/120.00	105.00/120.00	100.00/ —
New Manila Env. Cuts	65.00/ 72.00	65.00/ 85.00	60.00/ 70.00	40.00/ —
Col. Tab. Cards	55.00/ 65.00	43.00/ 50.00	40.00/ 50.00	50.00/ —
Manila Tab. Cards	70.00/ 85.00	75.00/ 85.00	60.00/ 65.00	65.00/ —
No. 1 Mixed Ledger	40.00/ 50.00	40.00/ 45.00	35.00/ 45.00	50.00/ —
White Ledger	57.50/ 62.50	57.00/ 65.00	55.00/ 60.00	65.00/ —
No. 1 Book & Mag.†	16.00/ 18.00	16.00/ 18.00	18.00/ 28.00	15.00/ —
No. 1 Rep'd. Hvy. Books‡	26.00/ 35.00	20.00/ 25.00	30.00/ 37.50	27.50/ —

† Includes Time & Life; no coarse groundwood. ‡ Not to exceed 10% groundwood. § Deld.

RAG MARKET

New Domestic Cotton Cuttings
OPS Ceiling Price, CPR 28 *
Delivered Mill Basis

No. 1 White Shirts	$16.50/$21.00*
No. 1 Unblchd. Muslins	18.50/ 21.00*
Blchd. & Unblchd. Underwears	17.00/ 21.00*
Blchd. Canton Flannels	15.50/ 21.00*
No. 1 Light Silesias	13.25/ 16.00*
No. 1 Light Prints	8.75/ 11.50*
No. 1 Blue Overalls	11.75/ 14.50*
Suntan Khakis	9.00/ 11.50*
Fancy Shirts	7.75/ 10.00*
Indigo Blues	7.50/ 10.00*
Mixed Khakis	6.00/ 8.00*
Corduroys	7.00/ 8.00*
Cottonades	6.75/ 8.00*
No. 1 Washables	5.25/ 6.50*

Old Domestic Cotton Rags
(Prices to Dealers, F.o.b. Ship. Pt.)

	Per 100 lbs.
Mixed White	$3.50/$4.50
Cotton Pants & Overalls	3.00/ 4.00
Thirds and Blues, Repacked	2.50/ 3.00
No. 1 Roofing Rags	1.20/ 1.30
No. 2 Roofing Rags	.90/ 1.00

Bagging
(Prices to Dealers, F.o.b. N. Y.)

	Per 100 lbs.
Foreign Gunny	$5.00/$5.25
Heavy Wool Tares	5.00/ 5.50
Foreign Scrap Burlap	4.50/ 4.75
Austr. Wool Pouches	6.00/ 7.00
Domestic Manila Rope	7.00/ 7.50
No. 1 Sisal Strings	6.50/ 7.50

COTTON LINTERS

Memphis Market
F.o.b. Oilmills

		Oct. 2 cents per lb.
Grade 2	1st cut	13.25/ 12.00
3	1st cut	11.50/ 10.00
4		9.00/ 6.50
5		6.00/ 4.25
6	2nd cut	4.00/ 3.50
7		3.50/ 3.50

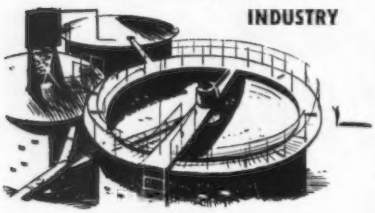
PRICES OF MATERIALS

Aluminum sulfate:		
coml. bags, wks.....cwt.	1.65	
iron-free, c.l.	3.25	
Alcohol, ethyl:		
tax free, dms. c.l.....gal.	1.01	/ 1.05½
deld. East Miss.		
Alcohol, methyl:		
Synthetic, Zone 1, dms.		
c.l. fit. alld.....gal.	.44	
Casein, acid prec.:		
dom. sh. pt. c.l. .....lb.	.28	/ .39
imp. ex. dock .....lb.	.22	/ .25
Caustic soda:		
c.l. wks. solid, 76% cwt.....	3.35	
flak. & grd. 100-lb. drums...	3.75	
liquid 50% tanks....	2.55	
liquid 70% tanks....	2.65	
China clay:		
dom. air-float, c.l. wks.....ton	10.00	
water-washed, lump. filler....	11.00	
coating	17.60	/30 50
imported, ex whse...short ton	15.20	/28.35
Chlorine:		
single-unit tanks, works..cwt.	2.70	
multi-unit .....cwt.	3.20	/ 4.40
Formaldehyde:		
USP, inh. dms, c.l. wks....lb.	.0625/	.0675
l.c.l., E. wks.....	.0675/	.0725
Fuel oil:		
Bunker C, No. 6 hvy. tanks, N.Y. harbor .....bbl.	2.10	/ —
light, tanks, refinery .....bbl.	2.00	/ 2.25
Hydrogen peroxide:		
USP, 35% cbys. E. of Miss. lb.	.23½/	.26½
Lime:		
hydrated, bags, wks. .....tons	13.50	
Rosin:		
B gum, drms, c.l. Savan..cwt.	7.00	/ —
K. M. N	7.33	/ 7.40
FF, wood, do. .....cwt.	4.10	/ 6.50
Rosin size:		
70%, gum & pale grds, tank cars, south, sh. pt.....cwt.	6.25	/ 6.30
Salt cake:		
dom. bulk, c.l. wks.....ton	17.00	
wks. frt. all.....ton	20.00	/22.00
Soda ash:		
light, 58%, bags, wks.....	1.50	
bulk .....cwt.	1.20	
Sodium silicate, 40°:		
turbid. c.l. wks.....cwt.	1.30	/
l.c.l. wks.	1.60	/ 1.85
Sodium peroxide:		
dms. c.l. E. of Miss.....lb.	.21	
l.c.l. do. .....lb.	.21½/	.22
Soybean, protein:		
chem. isol, wks, c.l., bags..lb.	.23½/	.24¼
Sulfuric acid:		
60° Be. cbys. c.l. wks.....cwt.	1.75	/ —
l.c.l. wks. .....cwt.	2.05	/ 2.85
Sulfur:		
crude, c.l. mines, contract, long ton	21.00	/22.00
f.o.b. vessels Gulf	22.50	/23.50
Sulfur dioxide:		
liquid, coml. cyl. wks.....lb.	.09	
multi-unit cars .....lb.	.0535	
Starches:		
pearl corn, bags, c.l. wks...cwt.	6.59	/ —
white dextrines, c.l. wks...cwt.	7.97	/ —
potato, Idaho, c.l. wks....cwt.	8.50	/ —
potato, Maine, f.o.b. wks...cwt.	10.50	/11.00
potato, imported O.D. ...bags	8.70	/ 8.90
Talc:		
domestic, sacks, c.l. wks...ton	25.00	/30.00
Titanium dioxide:		
anastase, c.l. deld., bags...lb.	.21	/ .21½
l.c.l. deld. .....lb.	.22	/ .22½
rutile, c.l. deld. .....lb.	.23	/ .23½
l.c.l. deld. .....lb.	.24	/ .24½

®NASH
INSTRUMENT AIR
COMPRESSOR
Produces only ®Clean Air without dust, heat or oil. No oil traps. No dust filters. No after-coolers . . . Ask for Bulletin 374.
®Registered Trade Marks of The Nash Engineering Co.
NASH
PAPER MILL
KNOW-HOW
NASH ENGINEERING COMPANY
421 WILSON AVE., SO. NORWALK, CONN

CORROSION

AFFECTS EVERY PLANT IN THE PAPER INDUSTRY



MILLIONS OF DOLLARS ARE LOST ANNUALLY

And your plant is *not* immune. Corrosion may attack in many ways . . .

1. Your Hard-to-Get Equipment
. . . may be ruined by constant attack of acids, alkalies, fumes, chemicals, moisture, gases and weathering.

2. Your Valuable Products
. . . are subject to contamination and loss whenever they are in contact with corroded surfaces.

3. Expensive Shutdowns
. . . and loss of production with costly man-hours for repairs may be incurred unnecessarily.

4. Your Profits
Ruined equipment, contaminated products, the loss of production and repair expense caused by shutdowns mean only one thing . . . reduction in *your* profits!

RIGHT NOW . . . you should investigate the economies of using Amercoat; a *line* of coatings built to protect against *specific* industrial corrosion hazards.

Our field engineers are available . . . without obligation . . . to check your plant for corrosion problems . . . and to give you *specific* recommendations.

AMERCOAT CORPORATION
A division of
American Pipe and Construction Co.
4809 Firestone Blvd., South Gate, Calif.

FOLLOW THE LINE OF *most* RESISTANCE

PROTECT WITH *Amercoat*

LITERATURE

Automatic Centrifugal Pumps. (Catalog) Includes tables, specifications, graphs and technical details on complete line. Barnes Mfg. Co., Mansfield, Ohio.

Diamond Soda Bleach Solutions. (Technical Manual) Describes general properties of hypochlorites, analyzes five major factors governing effective control of solution stability, and outlines calculations of chlorine, caustic soda and water involved in producing bleach solutions of any given concentration. Provides 13 specific tables with charts for quantities; reviews refrigeration requirements and includes four cross-sectional diagrams of typical installations. Diamond Alkali Co., 300 Union Commerce Bldg., Cleveland 14, Ohio.

Electric Fork Truck Comparison Chart. (Folder) Lists 27 buying guides and shows exploded drawings of Spacemaster Models J and E. Lewis-Shepard, Dept. R-1, Watertown, Mass.

Expansion Joints — Flexible Metal Hose. (Catalog) Contains complete specifications, application information and installation instructions. Flexonics Corp., 1315 South 3rd avenue, Maywood, Ill.

Handling Materials Illustrated. (House Organ, Vol. 10, No. 3) Features new release entitled "How to Catch Man-Hour Thieves," also Eastman Kodak Co. film on Certified Job Study 118, and booklet "What Makes Towmotor Tick." Available upon request. Towmotor Corp., 1226 East 152nd street, Cleveland 10, Ohio.

Kymene Wet-Strength Resins. (Leaflet) Includes sample of paper toweling which contains Kymene and sales copy on its use in the production of all types of wet-strength papers and paperboard. Hercules Powder Co., Wilmington 99, Del.

Legal and Tax Problems in Chattel Leases. (Memorandum) Discusses legal and tax problems stemming from Bureau of Internal Revenue practices and Court decisions with reference to option-to-purchase provisions in connection with leasing; also includes cognizance of a recent significant reversal of the Tax Court by the U. S. Circuit Court of Appeals. Council for Technological Advancement, 120 South La Salle street, Chicago 3, Ill.

Louis Allis Explosion-Proof Motors. (Bulletin 800) Fully-illustrated, it shows in detail special features, typical uses and many of the various electrical and mechanical modifications available. Louis Allis Co., 427 E. Stewart street, Milwaukee 7, Wis.

Permutit Zeolite Water Softeners. (Bulletin 2386) Discusses troubles caused by use of hard water, and economies effected by curing them. Also lists industries in which steam and water are of importance and explains three basic types of ion-exchange equipment. Permutit Co., 330 West 42nd street, New York 18, N. Y.

Production Information. (Bulletin 58) Features new compounding data on the latex series and discusses plasticizing and pigmenting methods. Includes tables and curves on physical properties on latex films and suggests 11 diverse uses. Product Development Dept., Plastics Div., Monsanto Chemical Co., Springfield, Mass.

Premier Colloid Mills. (Pamphlet) Contains construction specifications, charts and operation details, also illustrates processing of standard emulsions and pigments. Premier Mill Corp., 218 Genesee street, Geneva, N. Y.

South Bend Lathe General Catalog 5205. (88-page catalog) Provides specifications of all South Bend lathes, shapers and drill presses, also attachments, chucks, tools and accessories. South Bend Lathe Works, 425 East Madison street, South Bend 22, Ind.

Stainless Welding Chart. (Wall Chart) Covers welding and soldering operations on stainless steel; also pictures and describes jigging to weld and different types of welding. Included is a welding reference table. Armco Steel Corp., Middletown, Ohio.

Sterling Area: An American Analysis. (672-Page Book) Describes the Sterling Area, the economies of member countries and characteristics of their economic relations with one another and the rest of the world. Emphasis is placed on development of trade patterns and economic factors which influenced them during post-war period until mid-1950. Also contains comparisons with pre-war average — usually that of the years 1934 to 1938. Produced by the research staff of the ECA (Marshall Plan) Mission to the U.K. Directed by Dr. John M. Cassels, head of the ECA research and statistics division from June 1948 until December 1951. Published by Mutual Security Agency's Mission to the United Kingdom. Price $3.00. Available from U. S. Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

Yes — Clevelands are Still in Style Because Cleveland is Still Pioneering. (Folder) Illustrations and sales copy on Worm Gear Speed Reducers. Also announces

publication of a new general catalog 400. Cleveland Worm & Gear Co., 3290 East 80th street, Cleveland 4, Ohio.

NEWS OF ASSOCIATIONS

Lake States 1st Meeting

A capacity crowd, numbering approximately 160, turned out for the first meeting of the year of the Lake States Section of TAPPI. The meeting was held September 10, at the Conway Hotel, Appleton, Wis. After cocktails and dinner, Section President Herbert Rowe announced the program schedule for the coming year, then introduced those at the speakers table, Dr. Harry F. Lewis of The Institute of Paper Chemistry, Dr. Emil Heuser of La Jolla, Calif., and the officers of the local Section. He then called upon Dr. F. E. Brauns of the Institute staff to introduce the speaker of the evening, Dr. Karl Freudenberg, Director of the Chemical Institute of the University of Heidelberg, who used as his topic for the evening, "Lignin and its Formation in Plant Tissue." He discussed his work as well as other researchers' in the field of lignin chemistry, on constructing model compounds of "synthetic lignin" in order to learn more about the structure of lignin in its natural state. He pointed out that probably one of the greatest influences on the differences of synthetic and natural lignin was the aging and slowness of the reaction that forms the natural lignin, which may progress over a period of years as compared with the chemists' planned reaction which lasts over a period of a few weeks or months.

A short discussion period ensued after completion of Dr. Freudenberg's talk.

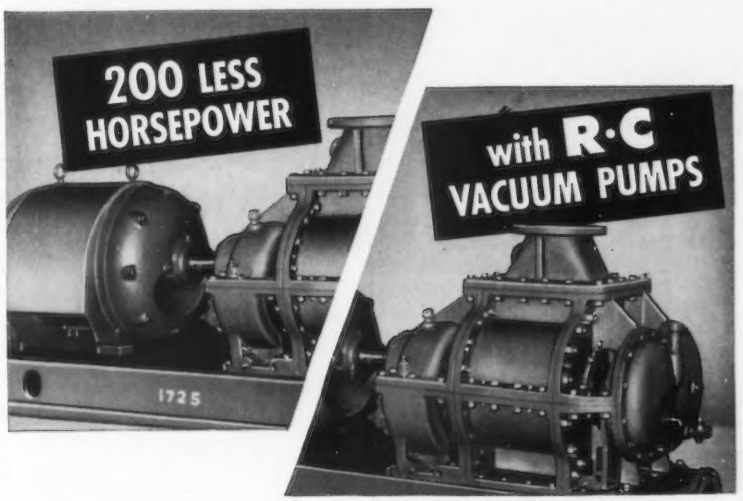
Corrugated Container Conference

The Corrugated Containers Committee, and the Chicago Section of TAPPI, will hold a 2-day conference in Milwaukee November 20 and 21 at the Schroeder Hotel. The first day will be devoted to papers and panel discussions. The second day will consist of plant tours through the corrugating departments of Cornell Paperboard Products Co., Downing Box Co., and Gaylord Container Corp., these trips to be concluded by 1:00 P.M. on November 21.

Highlighting the first day conference will be a resume of the industry survey on combining made by the Corrugated Containers Committee. Presenting the analysis of this, the most complete survey made to date on corrugated combining, will be H. T. Scordas, of the Union Bag and Paper Corp.

Five other panel speakers will present papers on corrugating problems: V. V. Vallandingham of Potlatch Forest Industries, will bring operating problems from all over the country together in a paper on "Problem Analysis"; C. R. Vander Meulen of Penick and Ford, will discuss the oftenpresent problem of "Warping and Washboarding"; F. E. Skiver of American Boxboard Co., will bring his many years of operating experience to the problem of "High-Low Corrugations"; A. F. Sperling of the Downing Box Co., will discuss "Corrugator Delivery Tables," and K. W. Max of Robert Gair Co., Inc., will present a paper entitled "An Operator Designs a Corrugator." Acting as moderator will be W. R. Tobin, of American Boxboard Co.

The plant tours on November 21 will be organized so that everyone will visit the corrugating departments of all three plants.



The higher operating speed (600 rpm and above) of Roots-Connersville Paper Mill Pumps, combined with power saving due to staging, permits a drastic reduction of motor costs. That means lower first costs and long-time economy in power consumption.

In a typical case, total installation horsepower was reduced by 200, with consequent reduction in power costs. That's the profit on a good many tons of paper.

Less water needed, less expensive foundations and less floor space bring additional dividends. Most important, the simple rotary positive design and sturdy construction of R-C Pumps result in proved reliability and low maintenance costs. The sum of these many dividends is the reason why so many paper manufacturers are turning to R-C equipment.

Ask for details in Bulletin 50-B-13 and consult us on your vacuum pump problems.

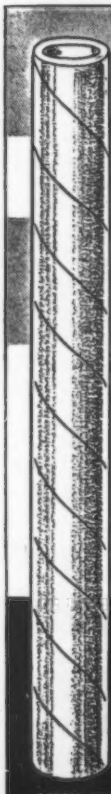
Roots-Connersville Blower Division
522 River Avenue • Connersville, Indiana

REG. U. S. PAT. OFF.
ROOTS-CONNERSVILLE BLOWER
BLOWER BUILDERS SINCE 1854
A DIVISION OF DRESSER INDUSTRIES, INC.

PULP
PAPER

NORDICUS
INCORPORATED
500 FIFTH AVENUE
NEW YORK 36, N. Y.

SELLING
AGENTS



MERKOR
Non-Returnable, Durable standard mill core.

GARTEX
Returnable and Non-Returnable extra strong mill core for regular and special needs.

ANY LENGTH, DIAMETER AND THICKNESS

Write for samples and prices

MERCER
PAPER TUBE, INC.
655 WEST INGHAM AVE.
TRENTON, NEW JERSEY
NEW YORK OFFICE—500 5th AVE.

Western N.Y. Section Empire State TAPPI 1952-53 Program

Date and Place	Topic and Speaker
November 5, 1952 Prospect House, Niagara Falls, N. Y.	Kimberly-Clark Night. Subject—"Stream Pollution" By—H. A. Rothchild, Kimberly-Clark Corp. Mr. Rothchild is one of the "pioneers" in the field of Industrial Pollution. This meeting will be a joint meeting with the Niagara Branch of the C.P.P.A.
December 3, 1952 Moore Business Forms, Inc. Highland Ave. Plant Cafeteria	Moore Business Forms Inc., Night. Plant Visitation—Moore Business Forms, Inc., Niagara Falls, N. Y.
February 4, 1953 Prospect House, Niagara Falls, N. Y.	International Paper Co., Night.
March 1953	Joint meeting with the Niagara Branch of C.P.P.A. in Canada.
April 1, 1953 Either Park Hotel, Lockport or Prospect House, Niagara Falls, N. Y.	Ladies Night

NOTE: All meetings will be dinner meetings starting promptly at 6:45 P.M.

OFFICERS

Chairman, Gordon K. Storin, Niagara Alkali Co.
Vice-Chairman, James J. Forsythe, International Paper Co.
Secretary, Fred P. Heil, Lockport Felt Co.
Treasurer, E. F. Andrews, International Paper Co.

Arrangements Committee
Chairman, R. J. Driscoll, International Paper Co.
Vice-Chairman, E. G. Miller, Carborundum Co.

Program Committee
Chairman, Irving Earle, Upson Co.
Vice-Chairman, Paul U. Bretchger, Buffalo Electro-Chemical Co.

Attendance Committee
Chairman, George E. Norton, George Irish Paper
Vice-Chairman, Irving Earle, Upson Co.

Membership Committee
Chairman, Fred R. Sheldon, Buffalo Electro-Chemical Co.
Vice-Chairman, F. B. Pickett, Kimberly Clark Corp.

Publicity Committee
Chairman, Donald M. Hart, Moore Business Forms, Inc.
Vice-Chairman, M. S. Thomson, Moore Business Forms, Inc.
Vice-Chairman, Francis R. Webster, Moore Business Forms, Inc.

Dr. Lewis Speaks On the Recruitment of Chemists

Dr. Harry F. Lewis, Dean of The Institute of Paper Chemistry, who has been attending the 122nd national meeting of the American Chemical Society at Atlantic City, N. J., was one of the speakers in a symposium held before the Society, September 17, on the subject of recruitment of chemists. He discussed the problem as it appears to the academic officers of The Institute. The viewpoints of industry, the university, the liberal arts college, and the high school were represented by speakers on the program.

Dr. Lewis pointed out in his paper that over the four years ending in June, 1951, the number of chemists graduating relative to the total number of men graduates has been falling slowly. Reports he received this summer from 76 colleges and universities indicated that in these institutions the relative number of men graduating with majors in chemistry was higher than in 1951. He added, however, that it would be presumptuous on this evidence to say that the tide had turned

for chemists or that these were normal variations.

His own observations showed, he said, that student placement in the universities has become big business and that schools formerly supplying significant number of candidates to the graduate schools find good men being siphoned into industry without graduate training. He concluded by recommending the extension of industrial funds for scholarships and more recognition to those colleges that have been prominently cited for the productivity of their training programs for chemists.

Other members of the Institute staff participating in the American Chemical Society meeting were Dr. Kyle Ward, Jr., and Dr. Irwin Pearl.

Plan Forestry Tour

The Forest Policy Committee of the American Paper and Pulp Assn., is sponsoring a two-day tour of Southern forests, on October 22 and 23, 1952. The tour, planned for executives in the paper industry, is primarily for the purpose of showing first-hand what pulp manufacturers in the South are doing to bring about a sustained yield in Southern woodlands, to insure future wood supplies.

The tour will start at Pensacola, Fla., on the morning of the 22nd and end at Bogalusa, La., on the evening of the 23rd. Travel will be via chartered buses. There will be a stopover on the night of October 22 at the Buena Vista Hotel in Biloxi, Miss., where a dinner program will be staged.

Enroute, the "tourists" will see company nurseries, plantations, cutting practices both good and bad, as well as educational work on farm woodlots. Those on the tour will see how an industry can actually pull itself upwards by tugging away at its own bootstraps, since those in the South realize full well that if they want trees, they must grow them and teach others how to grow them at a profit. Great strides have been made along those lines in the South and, while the problem of wood supplies is not licked, wood users in the South have something worth showing—and incidentally worth copying in other parts of the country.

First Canadian Packaging Exposition

Some of the latest methods for packing and preserving equipment for Canada's armed services will be exhibited publicly for the first time at the First Canadian National Packaging Exposition to be held in Toronto October 21 to 23 inclusive.

"No Shutdowns" WITH DINGS MAGNETS ON JOB

Dings Pressure-Tight Hump Pays for Itself Every Month at a Pacific Coast Paper Mill

"PAID FOR ITSELF its very first month of operation" says a Pacific Coast paper mill. "The Dings pressure-tight Hydro-Hump incorporating non-electric, permanent Perma-Plate magnets removes a handful of iron every 24 hours. The pulp comes in bales tied with soft iron wire. The bulk of this wire is removed by the men feeding the Hydrapulper but small ends invariably got away and fouled the pump. Considerable time was lost for repairs. SINCE INSTALLING THE DINGS WE HAVE NOT HAD A SINGLE SHUTDOWN . . ."

Built to withstand pressures to 30 psi, the Dings pressure-tight Hump is a complete unit ready for installation into existing pipelines. Special units are available for greater pressures. Double-barreled protection is provided by the two sets of Perma-Plate magnets positioned as shown above. These magnets are the most powerful permanent plate magnets available. Removal of iron is accomplished through easily accessible ports.

DINGS "JOB-SELECTED" MAGNETS FOR EVERY PAPER MILL NEED

WHATEVER your tramp iron problem, Dings can recommend exactly the right magnet for the job. "Job Selecting" a magnet at Dings is a matter of choosing from the widest line of types and sizes available backed by over 50 years experience as the world's largest exclusive builder of every conceivable type of magnetic separator.

This Catalog Helps You To "Job-Select" a Magnet

Catalog C-5000-B lists Dings complete line by application, describes all Dings magnets from the low cost Perma-Plate to the most powerful tramp iron magnet available—the RM Rectangular—effective at distances up to 30"! Send for it today.

Dings MAGNETS

DINGS MAGNETIC SEPARATOR CO.
4711 W. Electric Avenue
Milwuakee 46, Wisconsin

AD-1

It will speed the reply to your inquiry to mention Paper Trade Journal.

CHAS. T. MAIN, INC.
CONSULTING ENGINEERS
Process Studies, Design, Specifications and Engineering Supervision
PULP AND PAPER MILLS
Steam, Hydraulic and Electrical Engineering Reports, Consultation and Valuations
80 Federal Street Boston 10, Mass.

MISCO
STAINLESS STEEL CASTINGS
FOR ALL EQUIPMENT EXPOSED TO CORROSION BY SULPHITE ACIDS OR OTHER CORROSIVE AGENTS
MICHIGAN STEEL CASTING CO.
DETROIT 7, MICHIGAN

GRINNELL
FOUNDED 1850
WHENEVER PIPING IS INVOLVED
GRINNELL COMPANY INC.
Providence, R. I.
Sales Offices and Warehouses in Principal Cities

Egan
Designers and Builders of
TREATERS
AIR-DRYERS
LAMINATORS
COATERS
and
Special Machinery for Paper Converting and Plastic Film Machinery
Write for pamphlets
FRANK W. EGAN & COMPANY
BOUND BROOK, NEW JERSEY

FOREIGN NOTES

(Continued from page 16)

when considering the competitive prices now maintaining in all pulp markets. The long freight rate is another factor which rules out the dollar pulps.

Orders that have been received from the paper markets have been small with a request for immediate delivery. This denotes a hand-to-mouth existence and that stocks are now getting low.

Wood pulp imports into the U.K. during June came to 115,076 tons. This was a drop of about 38% over the same month 1951. Imports for the first six months of 1952 were 824,040 tons as against 783,667 tons last year. Various grades of the June imports were, chemical dry bleached 25,000 tons (round figures), dry unbleached 35,000 tons, chemical wet 8,000 tons, mechanical dry 350 tons, and mechanical wet 46,600 tons.

Paper Trade Journal SUPPLIERS

MORDEN MACHINES CO. announces that Blake Honeyman, vice-president of the company, and Mrs. Honeyman left September 25 for a month's business trip to Japan. Mr. Honeyman will inspect recent installations of 26 Morden "Stock-Makers" in 12 Japanese mills and will visit other mills interested in Morden Machines. Mr. Honeyman along with William E. Connor, Morden Machines sales representative in Tokyo, will call on "Stock-Maker" customers between Tokyo and Kobe as well as on the northern island of Hokkaido.

ST. REGIS PAPER CO. has selected a 15 acre site at East Providence, R. I., for the new plant of the company's Engineering and Machine Division, which will replace one presently occupied at Oswego, N. Y. It is expected to be ready for occupancy by the middle of next year. Under the terms of the agreement by which St. Regis sold its properties at Oswego to Marathon Corp. in April, 1951 delivery of the machine shop was not to take place until July 1, 1953.

The Engineering and Machine Division of the company designs and builds a wide range of valve and open mouth multiwall bag filling equipment and scales, and, in addition, manufactures bag making machines.

LOBDELL UNITED CO., Wilmington, Del., subsidiary of United Engineering and Foundry Co., has named George E. Kerr Sales engineer. He was formerly with Yale and Towne as assistant sales manager of Gasoline and Diesel Powered Fork Lift Trucks.

Included among Mr. Kerr's prime functions at Lobdell will be the handling of distribution of Electro-Pneumatic Hammers, and also the newly redesigned Mechanical Slotter.

CHICAGO BRIDGE & IRON CO. has elected J. A. Elsener, manager of the San Francisco office, a vice-president of the company. The company's western operations include a new modern fabricating plant at Salt Lake City, a construction headquarters at Torrance, Calif., and contracting offices at San Francisco, Los Angeles and Seattle.

Appleton Felts
For...SERVICE
APPLETON WOOLEN MILLS • APPLETON, WIS.

DE LAVAL liquor pumps
DE LAVAL Steam Turbine Company
TRENTON 2, NEW JERSEY

R. C. Leonard

P. M. Bigley

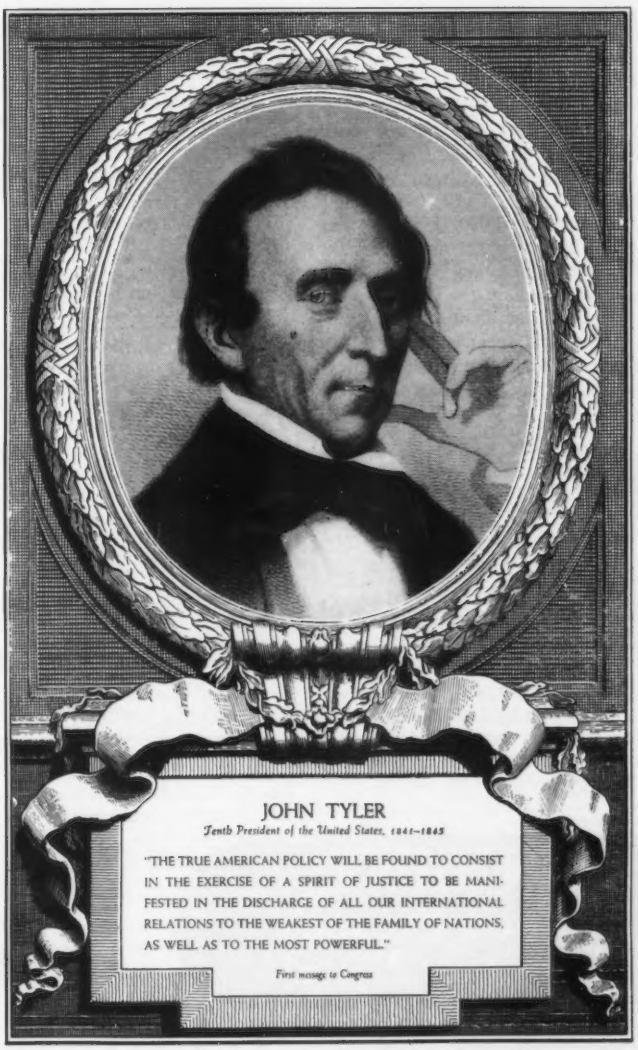
R. K. Rigger

T. R. Boyle

MICHIGAN ALKALI DIVISION, Wyandotte Chemicals Corp., announces the following promotions in the division, effective October 1: R. C. Leonard to product manager, Caustic Soda and Chlorine; P. M. Bigley to product manager, Soda, Ash, Dry Ice and Bicarbonate of Soda; R. K. Rigger to product manager, Synthetic Detergents; T. R. Boyle to administrative assistant to the vice-president, Michigal Alkali Division. These men will be located at Wyandotte.

SHELL CHEMICAL CORP. has appointed G. W. Huldrum, Jr., sales manager of its Eastern Division. V. C. Irvine has been named Western Division sales manager.

Mr. Huldrum will supervise all sales activities east of the Rocky Mountains for Shell's solvents, resins and plastics, and industrial chemicals. His office will be at 500 Fifth Avenue, New York City. Mr. Irvine will head sales activities in ammonia and ammonium sulphate, fertilizers, solvents for varnishes and lacquers, plastics and resins, and industrial chemicals west of the Rockies. His headquarters will be at 100 Bush Street, San Francisco.


JOHN TYLER
Tenth President of the United States, 1841–1845
"THE TRUE AMERICAN POLICY WILL BE FOUND TO CONSIST IN THE EXERCISE OF A SPIRIT OF JUSTICE TO BE MANIFESTED IN THE DISCHARGE OF ALL OUR INTERNATIONAL RELATIONS TO THE WEAKEST OF THE FAMILY OF NATIONS, AS WELL AS TO THE MOST POWERFUL."
First message to Congress

HAVE FAITH IN AMERICAN PRINCIPLES

Draper Brothers Company
Canton, Massachusetts
WOOLEN MANUFACTURERS SINCE 1856

The DRAPER Belt

NATIONAL STARCH's Alexander Research Laboratory, Plainfield, N. J., has opened the latest step in the company's $2 million resin expansion program. The plant was named after Alexander Alexander, founder of the company in 1895. From a small adhesives plant in New York City, the company has expanded to four plants in the United States, two in Canada, one in England, and one in Holland.

GRAVER TANK & MANUFACTURING CO., INC., East Chicago, Ind., has transferred its Ohio District sales office, managed by Dwight R. Rhoades, from Cincinnati to 1101 Hippodrome Building, 720 Euclid Avenue, Cleveland 14, Ohio.

HOOKER ELECTROCHEMICAL CO. has appointed William L. Gillespie as field salesman for Chicago and the Midwest area. Mr. Gillespie has been with Hooker since 1939, having been in the development and research department in various capacities until 1950. Prior to his recent transfer, he had been in the sales department on technical service.

At the same time Harold Wever was transferred to technical sales service. Mr. Wever has been at Hooker since 1943 and had been in the development and research department of the company prior to his recent transfer. He is a member of the Electrochemical Society and of the American Chemical Society.

OBITUARIES

Edwin S. Wilsey, 72, of Madison, N. J., chairman of the board of directors of the Newton Falls Paper Mills, Inc., and a director of the McGraw-Hill Publishing Company, died of a heart attack September 19 while attending a reunion of the class of 1904 of Princeton University, held at the Rolling Rock Club, Ligonier, Pa.

Mr. Wilsey became vice-president of the Newton Falls Paper Co. in 1924. He was elected president of the company in 1925 and retained that position until 1946 when he was named chairman of the board of directors.

Robert Grant, 64, Larchmont, N. Y., executive vice-president of Parsons & Whittemore, Inc., pulp and paper merchants, died September 21.

Mr. Grant had devoted his entire business career to the pulp and paper industry. For thirty years he was connected with the Lyddon-Parsons & Whittemore Organization, starting as manager of the Edinburgh, Scotland Office.

At his death he was executive vice-president and director of Parsons & Whittemore, Inc., New York; president, Manton Brothers, Ltd., Toronto, Canada; Director, Lyddon & Co. Ltd., London, England; Director Western & Kentucky Insurance Co., Louisville, and The William Kennedy & Sons Ltd., Owen Sound, Ontario, Canada.

Lt. Owen A. Norton, U.S.M.C.R., 24, was killed in action in Korea on September 5, while serving with the First Marine Division. Lt. Norton graduated from Rensselaer Polytechnic Institute in February 1951, and was the step-son of Edward J. Sullivan of H. G. Craig & Co., Inc., New York City.

AMERICAN PULP AND PAPER ASSOCIATION'S PAPER PRODUCTION RATIO REPORT

(Production as per cent of normal capacity)

COMPARATIVE WEEKLY SUMMARIES

	Aug. 30	Sept. 6	Sept. 13	Sept. 20	Sept. 27
1952	84.5	65.9	86.1	86.8r	88.6
	Sept. 1	**Sept. 8**	**Sept. 15**	**Sept. 22**	**Sept. 29**
1951	94.5	78.8	99.1	99.8	99.5

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1951	99.3	101.3	101.9	102.8	102.2	100.1	88.6	97.7	94.3	100.3	98.0	90.0	98.0
1952	97.1	97.8	95.1	90.6	88.6	88.7‡	75.5‡	86.7‡	81.6‡				

COMPARATIVE YEARLY SUMMARIES

	1945	1946	1947	1948	1949	1950	1951	1952
Year to Date	88.4	100.6	103.7	96.9	86.2	95.2	99.6	90.4
Year Average	85.4	96.9	107.7	91.2	83.7	95.8	98.0	

‡ Preliminary.
r Revised.

PAPERBOARD OPERATING RATIOS†

	Aug. 30	Sept. 6	Sept. 13	Sept. 20	Sept. 27
1952	90	72	93	93	94
	Sept. 1	**Sept. 8**	**Sept. 15**	**Sept. 22**	**Sept. 29**
1951	93	71	94	90	90

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1951	102	105	104	105	104	103	84	94	86	87	82	75	94
1952	81	86	85	82	82	82	71	89	88				

All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

Note: In the above tables *all* the ratios shown are on the basis of a normal 6 and 7 day capacity.

† Per cents of operation based on "Inch-Hours" reported on a 6-day basis to the National Paperboard Association.

CLEARING HOUSE

HELP WANTED

MEN WANTED — POSITIONS OPEN

We can place—Executive controller; night supt. newsprint mill; asst. supts. Cylinder supt. Cylinder board mill, attractive salary; and Fourdrinier machine mills; Cylinder and Fourdrinier machine foremen who may be qualified to act as asst. supt. and supt.

Chemists, chemical engineers and laboratory men, including technical graduates with or without practical experience; salesmen for fine papers, folding cartons, corrugated boxes, newsprint and other lines; color matcher; printing foreman; laminating foreman; power plant supervisors, chief engineers, master mechanics, machine shop foremen, designers and draftsmen; machine tenders, back tenders and beater engineers; graduate engineer to become sales engineer for mechanical specialties in southeastern states.

LIST YOUR CONFIDENTIAL APPLICATION WITH US to keep informed of attractive positions open in the pulp and paper mills.

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington St., Boston 8, Mass.
Telephone LIberty 2-6547

SPECIALISTS IN PLACING AND IN SUPPLYING PULP AND PAPER MILL EXECUTIVES O-10

NIGHT SUPERINTENDENT

For One Machine Folding Boxboard Mill Producing 50 Tons, Located in Miami, Florida. Excellent Opportunity For One Who is Now Tour Boss or Assistant Superintendent. Good Pay Plus Bonus. Box 52-421 care Paper Trade Journal. O-31

GENERAL ACCOUNTANT

Under general direction of comptroller, to supervise general accounting dept., maintain general ledger, develop financial statements, prepare all tax returns, and handle operating budgets. Should have college degree plus at least five years of accounting experience in paper industry. In reply summarize training and experience. Address—Bowaters Southern Paper Corporation, Calhoun, McMinn County, Tennessee. TF

EXPERIENCED MAN, mechanical maintenance, operation, development for cellulose wadding and facial tissue manufacturer. Permanent position with excellent future prospects for right man. Complete charge of developing new ideas and products with remuneration dependent upon results. Challenging opportunity. Start at about $150.00. Give complete resume with answer. Address Box 52-413 care Paper Trade Journal. O-10

WORKING SUPERINTENDENT for small fast growing Eastern mill making lightweight specialties. Cylinder machine experience essential. State qualifications and salary expected. Address Box 52-76 care Paper Trade Journal. TF

HELP WANTED

PAPER MILL SUPERINTENDENT for two-machine newsprint mill in Eastern Canada. Must have long background and thorough experience in newsprint, and be able to take complete charge of Machine Room. Reply giving entire personal history, experience, references and salary expected to Box 52-416, Paper Trade Journal. O-24

PLANT ENGINEER

To coordinate activities of design engineering firm and contractors during construction. Direct all engineering and maintenance in completed mill. Should have not less than ten years experience in pulp and paper mill maintenance. Experience in maintenance of sulphate pulp production facilities necessary. Familiarity with groundwood and newsprint production desirable. Summarize experience. Bowaters Southern Paper Corp., Calhoun, McMinn County, Tennessee. TF

SALES ENGINEER

Sales and Service representative to live in Pacific Northwest and call on pulp and paper industry. Prefer graduate mechanical or chemical engineer. Age 30-40. Reply to Personnel Director, Oliver United Filters, Inc., 2900 Glascock Street, Oakland, Calif. O-10

HELP WANTED

Starting our second machine. Need Machine Tenders, Back Tenders, Third Hands, and Beater Engineers. One straight Fourdrinier and One Yankee Fourdrinier. Manufacturing Wrappings, Specialties, Corrugating Medium, and Light Weight Chip. Best of Labor Relations, Insurance, and Liberal Pension Plan. Mill Located about 40 miles from Chicago, Ill.

PRAIRIE STATE PAPER MILLS
JOLIET, ILLINOIS PHONE 3-3441 OR WRITE TF

SITUATIONS WANTED

— NOW AVAILABLE—

Man with sound practical and basic technical experience to completely cover all the intimate phases of Design, Economic Manufacture and Customer Relations for the entire range of paper converted items such as; Envelopes, Commercial and Social Stationery, Business Forms, College and School Items, Binders, Bound Books, Set Up and Folded Boxes, Paper Bags and Specialties which are merchandised through direct and jobbing trade channels. Address Box 52-415 care of Paper Trade Journal. O-10

SUPERINTENDENT—25 years practical experience manufacturing folding boxboard and high grade light and heavy weight specialties from sulphite, sulphate, groundwood and old paper stock. Aggressive, capable man, good references. Address Box 52-402 care Paper Trade Journal. O-10

SITUATIONS WANTED

PERSONNEL OFFICER—10 years varied experience, 2 years in the Paper Industry. University graduate. Excellent management and union references. Desires new position with a future. No preference for location. Address Box 52-411 care Paper Trade Journal. O-10

EXPERIENCED Fine and Coarse Paper Chemist with technical and sales background, desires connection with paper mill. Address Box 52-423 care Paper Trade Journal. O-17

WANTED—Position as Chief Engineer. 20 years experience in Steam Power Plants and heat balance work. Age 46, married. Have first class engineer's license and best of references. Address Box 52-424 care Paper Trade Journal. N-14

SUPERINTENDENT with outstanding operating record and many years experience on Kraft and Sulphite Specialties etc., desires a change in connections. No objection to smaller mill looking for lower cost and improved operating conditions. Middle age. Perfect health. Technical background. References. Address Box 52-425 care Paper Trade Journal. O-17

FOR SALE

CUTTERS FOR SALE

One Clark-Aiken 64" Simplex Cutter with Maxon Overlapping Layboy.

One Clark-Aiken 88" Simplex Cutter with Maxon Overlapping Layboy.

One Clark-Aiken 124" Simplex Cutter.

One Hamblet 112" Simplex Cutter with Moore & White Layboy.

One Moore & White 50" Simplex Cutter.

The Clark-Aiken Co.
Lee, Mass.
Tel.—Lee 700 & 701 D-26

FOR SALE—25 x 38 John Thomson eccentric action Cutter & Creaser; Ryan High Die Press, upper platen 18 x 33; Seybold four-rod Embosser, 22 x 28, with gas heated head. For further details address Box 52-426 care Paper Trade Journal. O-17

FOR SALE

42" Camachine No. 6.
48" Kidder model CH Slitter.
72" Cameron 8-10 Slitter.
50" Hamblet Sheeter, with Back-stand.
100" Dillon Sheeter, with Back-stand.
Back-stands, made to order—any size.
THOMAS W. HALL COMPANY, Inc.
120 West 42nd St., New York 18
(Plant at Stamford, Conn.) TF

FOR SALE—50,000 gallon capacity closed Redwood Water Tank. SEAMAN PAPER COMPANY, Otter River, Mass. TF

RATES FOR CLEARING HOUSE ADVERTISING

HELP WANTED—75c a line. Minimum charge $3.75.

SITUATIONS WANTED—75c a line. Minimum charge $3.75. If repeated ½ rate will be charged for each consecutive repetition.

FOR SALE—75c a line. Minimum charge $3.75.

WANTED—75c a line. Minimum charge $3.75.

OPPORTUNITIES—75c a line. Minimum charge $3.75.

Classified advertising space may also be purchased at $5.00 per single column inch. All classified advertisements are payable in advance. If box number is used—70 cents additional

Address replies to advertisements appearing under Box Number in care of
PAPER TRADE JOURNAL, 15 West 47th Street, New York 19, N. Y.

COMPLETE 90" TRIM FOURDRINIER WET END

MAKE OFFER

1—Valley type Voith Stock Inlet with perforated roll and reduction gear unit.
Front and back frames with wire roll bearings, breast roll bearings, anti-friction bearing brackets on dead rails for 42 table rolls and stretch racks for stretch roll.
43—Table rolls with anti-friction bearings—5½" dia., 98¼" face.
1—Dandy Roll—10" dia. 94" face. Complete with stands. New Cover.
9—Stainless steel flat suction boxes, practically new—used less than six months. 8" wide, 8" deep, 6¾" wide, 9' 6" long, 6" drilled face, end grain maple covers.
2—Stainless steel dead rails with stands for suction boxes.
1—Shake
9—Flexible hose connectors with clamps to connect suction boxes to header.
1—Header pipe with nine 4" angle valves.
1—Rubber covered guide roll—9" dia., 9' 4" face, with bearings.
3—Brass Wire Rolls—8" dia.—9' 4" face, anti-friction bearings.
1—Gilbert Nash automatic wire guide.
1—18" Millspaugh Suction Couch Roll—complete with bearings, stands and gears.
1—Eastwood Nealley Wire—60/40 mesh—90' x 94". Brand New.
4—Fourdrinier Lindsay Wires—56/36 mesh—91' x 94". Brand New.

Offered by Gibbs-Brower Co., Inc., 21 East 40th St., New York 16, N. Y. **O-10**

FOR SALE: We are offering for sale a complete cylinder machine mill, 90" trim, with production capacity of around 55 tons per 24 hours.

The mill is located in the Midwest and has ample acreage for expansion, railroad facilities, plenty of water, no labor problems, brick buildings of suitable design and construction.

The owner would like to dispose of this mill as soon as possible. For further information, write Shartle Brothers Machine Company, Middletown Ohio, Used Equipment Department.

O-17

FOR SALE

1—Rubber covered Suction Press Roll 25" dia., 149" drilled face, anti-friction bearings, Herringbone gear and back drive. Will shorten this roll to fit your machine and guarantee job.
OSBORNE PAPER MILL EQUIPMENT CORP.
FULTON, N. Y. **Tel. 2-4254**
TF

PAPER COATING MACHINERY MANUFACTURERS — Waxing, Oiling, Carbon Laboratory Coating and Treating and Flat Ream Measuring and Converting Machines. New improvement. THE MAYER MACHINE COMPANY, INC., 1313 Buffalo Road, Rochester, 11, N. Y. TF

FOR SALE

Bronze Fourdrinier Wires

1—115" x 34'10"—75/52 Plain Mesh
3—115" x 34'10"—75/56 Twill Mesh
6—100" x 35' —75/56 Twill Mesh

Address Box 52-410 care Paper Trade Journal. O-17

FOR SALE

Two—(2) Toilet paper converting machines. Perforates 4¼ and 5" lengths, also 7½ and 13½" lengths for towels.
Two (2) twin type singlefold towel interfolders length 10½", width adjustable.
E. F. Woodhead, 711 DeKalb St., Norristown, Pa.
0-17

FOR SALE—One 14 x 14 Chandler & Taylor Variable Speed Engine 300—50 revolutions per minute. 60" x 26" flywheel equipped with Armstrong governors and Moore & White speed changer. This engine is on its original foundation and can be inspected at any time. Address Box 52-417 care Paper Trade Journal. N-28

WANTED

WE WILL BUY
YOUR SURPLUS MOTORS
M.G. SETS • GENERATORS
Hoists • Compressors • Transformers
CASH or TRADE
WRITE FULL DETAILS FOR OUR OFFER BY RETURN MAIL
CHICAGO *Electric Co.*
1325 W. 22nd ST.
CHICAGO 8, ILL.

WANTED

One 120" super calender stack suitable for 1000 F.P.M. Advise price, location and condition. Box No 52-422. Care Paper Trade Journal.
0-17

WANTED: (To Buy Equipment)

Small winder suitable for counter rolls. Can use as narrow as 36".
SECURITY CARTON CO.
Crichton Station Mobile, Ala.

WANTED

WANTED—One 10 x 10 variable speed steam engine. Address STOCKPORT PAPER CORP., Stockport, N. Y. O-17

MORE AND MORE

Individuals and Companies are ordering Lockwood's Directory each day.

It contains almost 1500 pages of vital information to everybody connected with the Paper Industry.

Order yours today.
$10. per copy.

LOCKWOOD TRADE JOURNAL CO., INC.
15 West 47th Street
New York, N. Y.

TELEPHONE
HUMBOLDT 2-2177

CABLE ADDRESS: JACKROSS

ROSS PAPER MACHINERY CO.

265 PASSAIC STREET
NEWARK 4, N. J.

CONVERTING
PAPER MAKING EQUIPMENT

NEW, USED, REBUILT
PAPER AND PULP MACHINERY

AGITATOR DRIVES
2—Cleveland enclosed—3 h.p. Ratio 24 to 1.
1—Foote Bros. enclosed—15 h.p. Ratio 33 to 1.

AIR HOIST
1—5-ton Ingersoll-Rand with Trolley.

BALERS
1—Economy Baler—20¼ x 24 x 49.
1—Economy Baler—18½ x 34 x 42¼.
1—Logeman Baler—27¼ x 47½ x 62 with GE Motor and Controls.

BEATER FILLING
1—New 54" Beater Filling with ⅜" bars, woods and bed plate.

BLOWERS
1—Sturtevant Monogram Fan, Ball bearing, Size 7.
1—Sturtevant Multivane Fan, Ball bearing, Size 6.

CALENDER ROLLS
16—Chilled Iron Rolls—Assorted sizes.

CALENDER STACKS
1—Farrel Birmingham, 5 roll, 108" Calender with doctors, 2 rolls bored for steam.
1—Black Clawson 90" 7 roll with 2 spare rolls.

COATER
1—Waldron 42" 2 roll Coater. Will apply waxes, gums, lacquers, etc., on cellophane, paper or plastics. New 1946. Used 3 years.

"CYCLAFINER"
1—Shartle "Cyclafiner" with coupling.

CYLINDER MOLDS
1—134" face x 36" diameter, with stainless steel shafts.
1—77" face x 48" dia.—Stainless Steel Shaft.

DAMPENER
1—Valley Micromist Unit for water finish on paper—120" deckle.

DRIVES
1—#3 Reeves anti-friction bearing.
1—#6 Reeves anti-friction bearing with motor for adjustment.
1—Beloit enclosed drive right angle, ratio 3 to 1, with couplings and pulleys.
1—Falk enclosed drive, 100 H.P., ratio 5 to 1.
1—Link-Belt 40 h.p., ratio 2.2-1, 500 r.p.m.—227 r.p.m.
1—Cleveland enclosed drive right angle, 7 h.p., 24½ to 1 ratio, 1750 r.p.m.
3—#2 Reeves enclosed vertical drives, ratio 3 to 1.

DRYERS
14—160" face x 48" diameter.
2—160" face x 36" diameter.
34—143" face x 48" diameter with frames, gears, bearings, steam joints, etc.
7—137" face x 48" diameter with frames, gears, bearings, steam joints, etc.
13—132" face x 48" diameter with frames, gears, bearings, steam joints, etc.
1—130" face x 48" diameter.
19—127" face x 42" diameter.
1—126" face x 48" diameter.
2—124" face x 48" diameter.
1—117" face x 48" diameter.
2—116" face x 48" diameter.
2—116" face x 36" diameter, with gears and bearings.
3—110" face x 42" diameter, with bearings.
1—104" face x 36" diameter.
2—103" face x 48" diameter.
1—102" face x 48" diameter, with bearings.
1—77" face x 48" diameter—with gear.
39—46" face x 48" diameter, with gears, bearings and steam joints.
3—42" face x 36" diameter, with frames, gears and bearings.

EXTRACTOR ROLLS
1—Downingtown Extractor Roll—128" face x 24" diameter. Anti-friction bearings.

FILTER PRESS
1—New Sperry 12" Filter Press—20 plate.

FILTERS
1—Oliver Vacuum Filter, 10' face x 5' 3" diameter. Steel vat.

FLAT SCREENS
3—8 plate Sandy Hill Roller Shoe with scrapers.
3—Bagley & Sewall 8 plate, with scrapers and plates.

FOURDRINIER SECTION
1—Pusey & Jones 156" x 80' Wire—Ball bearing. Complete from Voith Inlet to 22" diameter suction couch.

FOURDRINIER WIRES
3—New Lindsay 76" x 47 ft. 10"—60 mesh.

"HYDRAPULPER"
1—Shartle-Dilts 16' batch with hydraulic dump valve—cast iron tub.

HYDRAULIC PRESS
1—Thorpe 200 ton. Steam platens, 40" x 40" with pump.

JORDANS
1—#6 Miami, for motor drive.
1—Jones Majestic Stainless Steel Filling.
2—E. D. Jones Pony, 3/16" stainless steel fillings—banded plugs, spare new fillings.
1—Smith & Winchester Standard with granite fillings.

KNIFE GRINDER
1—100" Hanchett Knife Grinder with motor.

MOTORS
1—Allis Chalmers 30 h.p., 440 v., 660 r.p.m.
1—General Electric—25 h.p.—230 volts—3 ph. —60 cycle—300/900 r.p.m.
25 other 440 v. motors from 2 h.p. to 15 h.p.

PULP EQUIPMENT
2—APMEW Ball Bearing Pulp Screens—30 ton capacity—outward flow.
1—D. J. Murray 10' x 25' Barking Drum.

PULPERS
2—#2 Lannoye.

PUMPS
1—New Worthington—bronze filled, 10,000 g.p.m., 35' head, with extended base for motor—spare new impeller.
44—Centrifugal Pumps, open & closed impellers. Direct connected or Belt Driven. Extended base for motor. Assorted capacities and heads. Most used less than one year.

REELS
1—2 bowl 106"—18" diameter iron bowls.
1—2 bowl 94"—16" diameter bowls.
1—Pusey & Jones 162" drum reel, complete with unwind stand and water cooled brake.

REFINER
1—Shartle Hydrafiner with coupling and new spare stainless steel filling.

ROLL GRINDER
1—Lobdell 18' Roll Grinder handles 26" maximum diameter rolls.

ROLLS—PRESS, COUCH, etc.
32—Press rolls, brass and rubber covered.
14—Couch rolls, brass and rubber covered.
250—Brass and steel carrying rolls.

ROTARY SCREENS
1—#2 Bird—Copper vat.

SAVEALL
1—Bird #5 with enclosed drive and 3 h.p. motor.

SCREW PRESSES
1—Valley Voith Screw Press, size 2.
1—Valley Voith Screw Press—enclosed drive.

SHEETERS
1—Hamblet 124" Duplex Sheeter with maxim layboy—8 roll backstand—motor and starter.
1—Moore & White Simplex 114" Sheeter with slitters—counter. Maxson layboy overlapping delivery. 8 roll backstand, motor and starter.
2—Finley 42", single knife.
1—Moore & White 42", single knife.

SHREDDERS
1—American 37" Hammermill, anti-friction bearing.
1—Jeffrey, 26½" knives, 7 knife rotor, 6 knife bed plate. Ball bearing.

SLITTERS AND WINDERS
1—Beloit 125" Paper Machine Slitter and Rewinder—42" rewind.
1—Hudson Sharp 25W—66" Wax roll slitter and rewinder. New 1947.
1—Cameron 42", Model 6—24" rewind.
1—Cameron 44", Model 9-5.
1—Cameron 84"—Model 8—36" rewind—water cooled brake, rubber riding roll.

SMOOTHING PRESSES
2—New Farrel Birmingham 108" face x 24" diameter. Rubber covered, with ball bearings and enclosed drives.

STEAM TURBINES
1—De Laval 225 h.p. Initial pressure 140 p.s.i. Exhaust pressure 35 p.s.i. Complete with gear reducer.
1—De Laval Variable Speed—325 h.p. at 135 gauge and 30 p.s.i. exhaust. Complete with gear reducer.

STOCK PUMPS
1—Shartle 10 x 20 Single Plunger Pump.
2—Beloit 8 x 10 Triplex.
1—Triplex—8 x 10. Used less than 1 year.
2—Shartle Agi-flo, 13" suction, 14" and 4" discharge. Anti-friction bearings.
1—Beloit 10 x 20 Triplex.
1—Moore & White 10 x 16 Triplex.
1—Moore & White 8 x 8 Triplex.

SUCTION BOXES
6—Brass Suction Boxes, 156" x 4" opening.

SUCTION COUCH ROLLS
1—Millspaugh 36" diameter x 234" drilled face with enclosed drive, water cooled bearings, 12" suction boxes.
1—Millspaugh 156" drilled face x 22" diameter Suction Couch. Operated at 1000 ft. per minute.

SUCTION FELT ROLL
1—New Downingtown 186" drilled face x 16" diameter, with anti friction bearings and stands.

SUCTION PRESS ROLLS
1—Sandusky 84" drilled face x 22" diameter, rebuilt.

TOILET TISSUE PERFORATOR
1—Paper Converting Machine Co. Model 141 automatic 81" Perforator, Slitter and Winder—with three motors—ball bearing.

TRANSMISSION ROPE
700 ft.—New 1¼" Hemp Rope.
700 ft.—New 1¼" Cotton Rope.

VACUUM PUMPS
2—Nash ½ H-5 Vacuum Pumps.

VOITH INLETS
2—Valley Iron Voith Inlets, adjustable 83" to 86"—brass lip, stainless steel apron.
1—Valley Iron Voith Inlet 156", with motor drive, brass construction. Operated at 1000 ft. per minute.

VORTRAPS
9—4" Stainless Steel with rubber lined heads. 3" Hills McCanna Valves and stainless steel headers.

WRAPPING MACHINE
1—Morrow Stevens type 1C. Package thickness ¾" to 5". Used 30 days.

WHY LIST YOUR EQUIPMENT? — WE WILL BUY IT!

FOR SALE

CAMERON SLITTERS

1—62" Type 26-3A Duplex
1—62" Type 10-10.
1—62" Type 6.
1—42" Type 40-2A
1—42" and 1—62" Type 40-1-AF
1—72" and 1—86" Type 8-10.
1—112" Type 18

OTHER SLITTERS

1—62" Beck Duplex Rewind Razor Blade Slitter and Rewinder, Suitable for paper and plastics
1—40" Kidder Model SL, Shear-cut.
1—30" Meisel Series OP, Shear-cut.
1—30", 1—40" and 1—60" Langston Type A Shear-cut.
1—42" Kidder Merchant Model Shear Cut Pneumatic control
1—40" Type C Fales, shear-cut
2—45" Ruf Duplex Cellophane. Razor Blade Type.
1—94" Beloit, heavy duty Paper Machine Winder
1—86" Wolverine Double-drum Surface Rewinder. Rewinds 60" diameter rolls.
1—90" New Goebel Mill Type Winder. Shear-cut.

POWER PAPER CUTTERS

15—Seybold, 44" Auto Space "Sixty," 50" Sixty; 50", 56", 65" and 74" 10Z; 56" 8Z; 44" 6Z; 39", 44", 62" and 74" 20th Century; 44", 48" and 55" Holyoke.
4—Oswegos, 38", 44", 50" and 74"
1—54" Sheridan
2—Dexter, 38" and 50"
4—Acme, 32", 34", 36" and 50"
1—30½" Diamond
3—Smith & Winchester Undercut, 63", 69" and 84".
1—36" "Perfecta" with attachments to shred paper from ⅛" wide up.

MISCELLANEOUS MACHINES

Die Presses—
1—Seybold 24" x 38" U.A. Model
4—Sheridans, 18" x 33", 19" x 45", 22" x 60", 44" x 22"
1—Sheridan Continuous feed embosser Model 8B Platen 33" x 46".
1—40" Flocking machine
1—36" Champlain-Chambon two unit rotogravure press. With Shartle-Miami Waxing Machine. Turning bars and PIV Drive. Roll to roll.
1—30" Bagprint 3 color Aniline Printing Press. Roll to Roll.
1—24" and 1—34" Heinrich 3 color Aniline Presses. Roll to roll.
1—12" and 1—24" Schultz Automatic Shelf and Wax roll machine. Rewind 25' to 250'.
1—Paper Converting Machine Co.'s dispenser type napkin machine, Model #237.
2—81" Dietz Toilet Paper Convertors.
2—Cannard and 1 Phoenix Gage Co.'s Automatic Toilet Roll Wrapping Machines.
1—36" Beck Sheeter with electric eye and Layboy
1—34" Waldron Gummed Paper Breaker
1—46" Perkins Embossing machine
1—P.C. M Co.'s high speed 3 web napkin folder Model 1061, with embossing attachment.
1—60" Mayer Type Waxing Machine.
1—48" Mayer Equalizer Waxing Machine Type 40-EV. Two Coating Heads and three 16" diameter Cooling Drums.
1—50" Two ply Laminating Machine for combining paper and board, complete with 5 H.P. A.C. Motor and Reeves Variable Speed Drive.
1—75" Hamblet Single Rotary Sheet Cutter. With Erie Layboy and 24 Roll Backstands.
1—124" New Clark-Aiken Type "C" Single Sheet Cutter.
1—84" Hamblet Single Sheeter with M&W Layboy and Backstands.
2—Asphalt Laminating machines, one 70" and one 88".
1—84" 9-roll Holyoke Stack of Super Calenders.
1—62" x 60" Dilts Iron Tub High Speed Bandless Beater.
1—70" x 48" Jones Stainless Steel High Speed Beater.
1—Weber #5AG SOS Bag Machine range 5 to 16 pounds.
1—H-7 Nash Hytor Vacuum Pump.
1—H-9 Nash Hytor Vacuum Pump with 75 HP., D.C. Motor.
1—Yale High Lift Elevator Platform Truck. Type K27-6M.
3—E. D. Jones concrete tub Beaters. Roll size 57 dia. x 60 face.
1—#1 Valley Iron Works Screw Press.

GIBBS-BROWER CO. INC.

Please address reply to Room 902
21 E. 40th Street, New York 16, N.Y.
Telephone Lexington 2-5759 O-10

WANTED | **WANTED**

WANTED

PRODUCT OR BUSINESS FOR DIVERSIFICATION

Our client, an established manufacturer in the mid-south will buy a distinctive specialty product or business.

Selling to textile, paper, cellulose products, chemical or other manufacturers, with market acceptance established.

Please write Department "B" enclosing this ad. Brokers protected.

CHARLES H. WELLING & CO., INC.

52 Vanderbilt Avenue **New York 17, N. Y.**

Consultants in Diversification and New Products S-19

UNIVERSITY OF MAINE

LECTURE SERIES II

will appear

exclusively

in the

November 14th, 1952

issue of

PAPER TRADE JOURNAL

40 lectures

150 illustrations

200 pages of text

For quick and easy pH Determination

CAMBRIDGE
CONTINUOUS
pH RECORDER

This instrument provides a continuous record of pH in aqueous solutions. Because of its accuracy and dependability, it is extensively used in paper making.

CAMBRIDGE
DIRECT READING
pH METER

This portable, indicating instrument is especially designed and ruggedly built for plant use. Operating directly from line power, it is so simple to use that unskilled workers can and will use it. Of particular value in processing Pulp, Applying Sizing and Reducing Corrosion of Pipes, Fittings and Equipment.

Send for Descriptive Literature

CAMBRIDGE INSTRUMENT CO., INC.
3702 Grand Central Terminal, New York 17, N. Y.
PIONEER MANUFACTURERS OF PRECISION INSTRUMENTS

STATEMENT OF THE OWNERSHIP, MANAGEMENT, AND CIRCULATION, REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946. (Title 39, United States Code, Section 233).

Showing the ownership, management and circulation of PAPER TRADE JOURNAL, published weekly at East Stroudsburg, Pa., for October 1, 1952.

1. The names and addresses of the publisher, editor, managing editor, and business manager are: Publisher, George E. Lockwood, 15 West 47th st., New York 36, N. Y.; Editor, Henry J. Perry, 15 West 47th st., New York 36, N. Y.; Managing Editor, R. E. Thuemmes, 15 West 47th st., New York 36, N. Y.; Business Manager, Arthur E. Gordon, 15 West 47th st., New York 36, N. Y.

2. The owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.) Lockwood Trade Journal Co., Inc., 15 West 47th st., New York 36, N. Y. Stockholders: Geo. E. Lockwood, 15 West 47th st., New York 36, N. Y.; A. J. Pearson, 15 West 47th st., New York 36, N. Y.; Solomon Mayer, 15 West 47th st., New York 36, N. Y.; John Banninga, 15 West 47th st., New York 36, N. Y.; T. R. Lasser, 15 West 47th st., New York 36, N. Y.; Edythe Ellison, 15 West 47th st., New York 36, N. Y.; Mrs. Marion C. Zabriskie, 15 West 47th st., New York 36, N. Y.; George Saxe Macdonald Trust, Bankers Trust Co., 16 Wall st., New York 5, N. Y.; Geo. E. Lockwood, J. K. Lasser, 15 West 47th st., New York 36, N. Y., Trustees.

3. The known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears upon the books of the company as trustees or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also, the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above was 5674. (This information is required from daily, weekly, semiweekly and triweekly newspapers only.)

ARTHUR E. GORDON,
(Signature of Business Manager.)

Sworn to and subscribed before me this 1st day of October, 1952.
JACK EDELSTEIN,
(Seal) Notary Public, New York County,
Bronx Co. Clks. No. 5; N. Y. Co. Clks. No. 03-614-7100. Term expries March 30, 1954.

FIBER RESEARCH AND SERVICE

Semi-Chem. and
Chemical Pulp
Processes

Pilot Plant Facilities

THE KINSLEY CHEMICAL COMPANY
Cleveland 11, Ohio

Nalco®
WATER TREATMENT CHEMICALS and SERVICES

- BOILER WATER
- SLIME CONTROL
- ANTIFOAM
- SIZE CONTROL
- PITCH CONTROL

Wherever you use Nalco chemicals and services, you can be sure of *dependable results.*

Bulletin 55 details Nalco products and services for pulp and paper mills. Write for your copy today.

NATIONAL ALUMINATE CORPORATION
6221 West 66th Place • Chicago 38, Illinois

The Trade-Mark of
Dependable Felts

TRADE MARK

The Waterbury Felt Company
SKANEATELES FALLS, N. Y.

WANT RESULTS
USE THE CLEARING HOUSE

J. E. SIRRINE CO.
Greenville, South Carolina
Engineers
PAPER & PULP MILLS • WASTE DISPOSAL • TEXTILE MILLS • APPRAISALS • WATER PLANS • STEAM UTILIZATION • STEAM POWER PLANTS • HYDRO-ELECTRIC • REPORTS

WHERE TO BUY

ABRASIVES
Norton Co.
Simonds Abrasive Co.

ADHESIVES
American Cyanamid Company Plastics & Resins Division
Diamond Alkali Co.
The Dow Chemical Co.
E. I. du Pont de Nemours & Co., Inc.
B. F. Goodrich Co.
The Goodyear Tire & Rubber Company
Monsanto Chemical Co.
Morningstar, Nichol, Inc.
National Starch Products, Inc.
Nopco Chemical Co.
Plaskon Division, Libbey-Owens-Ford Glass Co.
Reichhold Chemicals, Inc.
Rohm & Haas Co.

ADJUSTABLE SHAKE MOTION
Manchester Machine Co.
Rice Barton Corporation

AGITATORS
Apmew, Inc.
Appleton Machine Co.
Biggs Boiler Works Co.
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
Improved Paper Machinery Corp.
E. D. Jones & Sons Co.
Midwest Fulton Mch. Co.
D. J. Murray Mfg. Co.
Moore & White Co.
The Noble & Wood Machine Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Valley Iron Works Co.
Shartle Brothers Machine Co.

AIR CONDITIONING
Lamar-Olmen Co.

ALLOYS
Michigan Steel Casting Co.

ANTIFOAM
American Cyanamid Company Industrial Chemicals Division
Hercules Powder Co., Inc.
National Aluminate Corp.
Nopco Chemical Co.

APRON CLOTH
Williams-Gray Co.

BAG MACHINES
Dilts Machine Works
Potdevin Machine Co.
H. G. Weber & Co., Inc.

BALL MILLS
F. L. Smidth & Co.

BARK BURNER
Combustion Engineering-Superheater, Inc.
Nichols Engrg. & Research Corp.

BARKERS AND CHIPPERS
Appleton Machine Co.
Carthage Machine Co.
Improved Paper Machinery Corp.
D. J. Murray Mfg. Co.
The Noble & Wood Machine Co.
Valley Iron Works Co.

BARS
Dilts Machine Works
E. D. Jones & Sons Co.
Midwest Fulton Mch. Co.
The Moore & White Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

BASIC WEIGHT SCALES
Thwing-Albert Instrument Co.

BEARINGS
The Bagley & Sewall Company
Beloit Iron Works
Black Clawson Company
Dodge Mfg. Corp.
B. F. Goodrich Co.
E. D. Jones & Sons Co.
Magnus Metal Corp.
The Moore & White Co.
The Noble & Wood Machine Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
SKF Industries
Timken Roller Bearing Co.
The Torrington Co.
Valley Iron Works Co.
Westinghouse Electric Corp.

BEATERS
Cowles Company

BEATERS AND JORDANS
Apmew, Inc.
The Appleton Machine Co.
Black Clawson Company
Dilts Machine Works
Downingtown Mfg. Co.
Hermann Mfg. Co.
E. D. Jones & Sons Co.
Midwest Fulton Mch. Co.
Morden Machines Co.
The Noble & Wood Machine Co.
J. J. Ross Company
Ross Paper Machy. Co.
Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

BED PLATES
Bahr Brothers Mfg. Co.
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
Farrel-Birmingham Co., Inc.
E. D. Jones & Sons Co.
Lukenweld Div., Lukens Steel Co.
Midwest Fulton Mch. Co.
The Noble & Wood Machine Co.
Rice Barton Corporation
Shartle Brothers Machine Co.
Valley Iron Works Co.

BELTING
Alexander Bros. Belting Co.
Graton & Knight Inc.
Goodrich, B. F., Co.
The Goodyear Tire & Rubber Company
Manheim Mfg. & Belting Co.

BINS, STORAGE
Biggs Boiler Works Co.
The Noble & Wood Machine Co.

BLEACHING AGENTS
E. I. du Pont de Nemours & Co., Inc.
General Dyestuff Corp.
Rohm & Haas Co.
Virginia Smelting Co.

BLEACHING APPARATUS
Improved Paper Machinery Corp.
E. D. Jones & Sons Co.
Perkins & Sons, Inc., B. F.
Moore & White Co.
Niagara Alkali Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

BLOW PIPES & PITS
Carthage Machine Co.
Kalamazoo Tank & Silo Co.
Moore & White Co.
Murray Mfg. Co., D. J.
Walworth Company

BOARD MACHINES
The Noble & Wood Machine Co.

BOILERS
Babcock & Wilcox Co.
Biggs Boiler Works Co.
Combustion Engineering-Superheater, Inc.

BOTTOMS
Kalamazoo Tank & Silo Co.
Valley Iron Works Co.

BOXBOARD SCALES
Thwing-Albert Instrument Co.

BRUSH ROLLS
M. W. Jenkins Sons, Inc.
Gus Reidel & Son

BRUSHES
M. W. Jenkins Sons, Inc.
Gus Reidel & Son
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.

BUILDING MAINTENANCE CONTRACTORS
Gilbert Engineering Co.

BURSTING TESTERS
B. F. Perkins & Son Inc.
Testing Machines, Inc.

CALENDERS
The Bagley & Sewall Company
Beloit Iron Works
Black Clawson Company
Downingtown Mfg. Co.
Farrel-Birmingham Co., Inc.
Lobdell United Co.
The Moore & White Co.
Perkins & Sons, Inc., B. F.
Rice Barton Corporation
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

THE PROGRESS OF PAPER

Papyrus to Parchment to Paper dating from 2000 B.C.

Brief Summary of Contents

Map of origin of paper, Egypt to the Near East. Also map of area of invention and progress of production. Illustrated with drawings and photographs of actual material, some of ancient origin.

European development.

Spain, Italy, Greece, France, Belgium, Holland, Germany, Poland, Russia, England, to 1800 A.D.

Invention of machines, expansion in Europe with many odd facts to 1850 A.D.

Advancing mechanical progress brings more inventions abroad—to 1875 A.D.

American phase of transition, 1690-1775.

Improvements of paper in America after the Revolution.

An infant industry gradually becomes larger — development of American mills, 1800-1850.

—and many other subjects.

ORDER YOUR COPY TODAY—$6.00

THE LOCKWOOD TRADE JOURNAL CO., INC.

15 West 47th St., New York 19, N. Y.

CARRIER ROPE
Williams-Gray Co.

CASEIN
American Cyanamid Co
Industrial Chem. Div.
Hercules Powder Co.

CASTINGS
Appleton Machine Co.
The Bagley & Sewall Company
Black Clawson Company
Babcock & Wilcox Co.
Carthage Machine Co.
Dilts Machine Works
Downingtown Mfg. Co.
Farrel-Birmingham Co.
Hamblett Machine Co.
Lobdell United Co.
Magnus Metal Corp.
Michigan Steel Casting Co.
The Noble & Wood Machine Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Walworth Company

CENTRIFUGAL MACHINERY
Bird Machine Co.
Nichols Engrg. & Research Corp.
Ross, J. O., Engrg. Co.
Shartle Brothers Machine Co.

CHAINS
Jeffrey Mfg. Co.

CHEMICAL COTTON PULP
Hercules Powder Co.

CHEMICALS
American Cyanamid Co., Industrial Chem. Div.
Calco Chemical Co.
Calgon, Inc.
Diamond Alkali Co.
Dow Chemical Company
E. I. du Pont de Nemours & Co., Inc.
General Dyestuffs Corp.
Geigy Co., Inc.
B. F. Goodrich Chemical Co.
Gottesman & Co.
Hercules Powder Co.
Heyden Chemical Corp.
Hooker Electrochemical Co.
The Kinsley Chemical Company
Monsanto Chemical Company
National Aluminate Corp.
Naugatuck Chemical Division of U. S. Rubber Co.
Niagara Alkali Company
Nopco Chemical Co.
Pittsburgh Plate Glass Co., Columbia Chemical Division
Reichhold Chemicals, Inc.
Rohm & Haas Co.
Virginia Smelting Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

CHESTS
The Bagley & Sewall Company
E. D. Jones & Sons Co.
Kalamazoo Tank & Silo Co.
Midwest Fulton Mch. Co.
The Noble & Wood Machine Co.
Shartle Bros. Mch. Co.

CHUCKS
Efficiency Engrg. Co.

CLEANING MACHINES
Hydro-Silica Corp.

CLEANING MATERIALS
American Cyanamid Company Industrial Chemicals Division
Diamond Alkali Co.
The Dow Chemical Company
E. I du Pont de Nemours & Co., Inc.
General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Pittsburgh Plate Glass Co.
Wyandotte Chemicals Corp., J. B. Ford Division

CLOTH
Lindsay Wire Weaving Co.

CLUTCHES
Appleton Machine Co.
The Bagley & Sewall Company
Beloit Iron Works
Black Clawson Company
Dodge Mfg. Corp.
Farrel-Birmingham Co.
Hudson-Sharp Mch. Co.
Moore & White Co.
D. J. Murray Mfg. Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Bros. Mch. Co.

COATING MACHINERY
Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
The Mayer Machine Co., Inc.
Moore & White Co.
Potdevin Machine Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corporation, John
Weber, Herman G., & Co., Inc.

COATING MATERIALS
American Cyanamid Company Industrial Chemicals Division
The Dow Chemical Co.
E. I. du Pont de Nemours & Co., Inc.
B. F. Goodrich Chemical Co.
The Goodyear Tire & Rubber Company
Hercules Powder Co.
J. M. Huber Corp.
Monsanto Chemical Company
Naugatuck Chemical Division of U. S. Rubber Co.
Nopco Chemical Co.
Plaskon Division, Libbey-Owens-Ford Glass Co.
Reichhold Chemicals, Inc.
Wyandotte Chemicals Corp., Michigan Alkali Div.

COMPLETE FOURDRINIER ROLL GRINDING
Manchester Machine Co.

COMPRESSORS
Nash Engineering Co.
Roots-Connersville Blower Corp.

CONDENSATE FILTERS
Hungerford & Terry Inc.
The Permutit Company

CONDENSERS
Biggs Boiler Works Co.
Midwest Fulton Mch. Co.

CONDITIONING
Vap Systems Co.

CONTRACTORS
Meyer & Sons Co.

CONSISTENCY REGULATORS
Askania Regulator Co.
Bird Machine Company
DeZurik Shower Company
Pandia, Inc.
Trimbey Machine Works

CONSULTING ENGINEERS
Ebasco Services
Frank W. Egan & Co.
Ferguson, H. K., Company
Alvin H. Johnson & Co., Inc.
Main, Inc., Chas. T.
O'Donoghue, Roderick
The Rust Engrg. Co.
J. E. Sirrine & Co.
Frank C. Vaughan
John Waldron Corp.

CONTINUOUS DIGESTER
Pandia, Inc.

CONTROLLERS
Black Clawson Company
The Brown Instrument Co.

CONTROLS
The Brown Instrument Co.
Johnson Corp.
Poirier Control Co.
Shartle Bros. Mch. Co.
Westinghouse Electric Corp.

CONVERTING MACHINERY
The Bagley & Sewall Company
Egan, Frank W., & Co.
John Waldron Corp.
Dilts Machine Works

CONVEYORS
Black Clawson Company
Jeffrey Mfg. Co.
Murray, D. J., Mfg. Co.
Ross Engineering Corp., J. O.
Shartle Brothers Mch. Co.

CORES
Elixman Paper Co.
Smith & Winchester Mfg. Co.
Sonoco Products Co.

CORROSION RESISTANT
Amercoat Corporation

COTTON LINTER
Hercules Powder Co., Inc.
Railway Supply & Mfg. Co.

COUCH ROLLS
Beloit Iron Works
Improved Paper Machinery Corp.
Manchester Machine Co.

. . . Fast, accurately measured saturation or coatings with the HUDSON-SHARP

AW-2 WET OR DRY WAXER

PROCESSES SHEETS 50 to 95" WIDE WET OR DRY—

FOR THE ARMED SERVICES
We are contributing to the nation's defense program by providing a large part of our increased production facilities for building precision armaments. Civilian orders are filled on a reasonable time basis only.

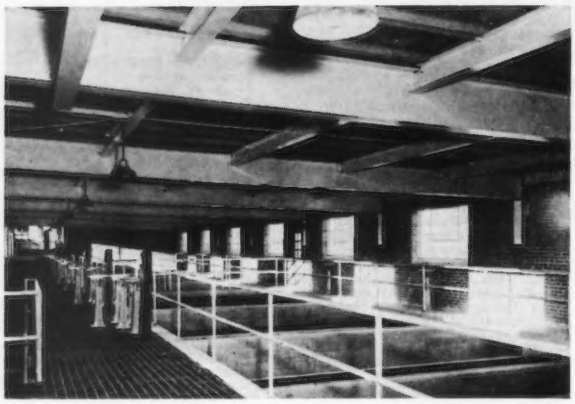
Smaller waxers and wax laminators for every converting need, available.

- Hollow cast iron, cross tied, non-vibrating frame.
- Ball bearings throughout.
- Adjustable ball bearing guide rolls.
- Controlled wax heating — steam, oil, or electricity.
- Polished, chrome-plated cooling rolls — changeable to heat rolls for dry waxing.
- H-S friction clutch—flat or V-belt drive.
- Single lever adjustable squeeze rolls.
- Center shaft friction type rewinder.

Write for complete details.

Completely versatile, this modern machine processes fully saturated or dry coated wax papers with equal ease of operation. In wet wax production, sheet is taken from parent roll and immersed in wax bath with movable adjustments to time the dwell of immersion period. Sheet then passes through a squeeze roll section to remove excess wax and through a chilled roll section direct to rewinder. For dry waxing, sheet is carried direct to an applicator roll where a measured quantity of wax is applied to one side of sheet, thence to a heated pressure roll which forces the wax into sheet. Unit features rewinding into a firm, accurate roll. Machine is built in two sections for spacing application unit and chilling-rewind section as desired. Open type construction permits free adjustment means and rapid material roll changes.

HUDSON-SHARP
MACHINE CO • GREEN BAY • WIS
Manufacturers of
Printers, Embossers, Folders, Interfolders, Waxers, Laminators, Wrapping Machines, Core Winders, Packaging Presses, Crepers and Napkins, Toilet Tissue and Paper Towel Units.



Concrete Gravity Air-Water-Wash type water Filtration Plant producing, at low cost, water with turbidity 0, color under 5 and iron 0.05 p.p.m. Fe.

Are you getting that type of water for your product?

Over 50 years experience building water treating plants for all needs.

Bulletins on Request.

H&T SERVICE

HUNGERFORD & TERRY, INC.

CLAYTON 4, NEW JERSEY

NO MORE VALVE TROUBLE FROM FOREIGN MATTER!

Here's the valve that closes drip-and-air-tight even when scale, rust or foreign substances are present in the flow and parked on the valve seat.

DeZURIK EASY-OPERATING PLUG VALVES beat the problem of leakage through their exclusive rubber-faced plugs —plugs that provide a dead-shut, cushioned closure even with solids or gums intruding. There's no scoring, sticking, distortion or lubrication . . . and NO LEAKAGE!

The DeZurik Line has a valve for every job; write for catalog.

DeZURIK Shower Co.
SARTELL
MINNESOTA

COUPLINGS
The Bagley & Sewall Company
Black Clawson Company
Farrel-Birmingham Co., Inc.
Hermann Mfg. Co.
E. D. Jones & Sons Co.
Dodge Mfg. Corp.
Moore & White Co.
The Noble & Wood Machine Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works
Waldron Corp., John

CRANES
Reading Crane & Hoist Corp.
Whiting Corp.

CURL TESTER
Thwing-Albert Instrument Co.

CUTTERS
The Bagley & Sewall Company
Beloit Iron Works
Black Clawson Company
Dilts Machine Works
Dusenbery Co., Inc.
Gibbs-Brower Company, Inc.
Graphic Arts International Corp.
Thomas W. Hall Co.
Jagenberg-Werke Akt. Ges.
Moore & White Co.
Perkins & Son, Inc., B. F.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
The Smith & Winchester Mfg. Co.
Taylor, Stiles & Co.

CYLINDER MOULDS
Black-Clawson Co.
Hayden Wire Works Inc.
Improved Paper Machinery Corp.
Manchester Machine Co.
Rice Barton Corporation
Sinclair Company

CYLINDERS
Biggs Boiler Works Co.
M. W. Jenkins Sons, Inc.

CYLINDER WIRES
Hayden Wire Works Inc.
Wisconsin Wire Works

DAMPENERS
Perkins & Son, Inc., B. F.
Valley Iron Works Co.

DANDY ROLLS
Plank Company

DECKLE WEBBING
Williams-Gray Co.

DEFIBRATORS
American Defibrator Co.

DEFOAMERS
American Cyanamid Co., Ind. Chem. Div.
Hercules Powder Co., Inc.

DE-INKING
Bird Machine Co.
Dilts Machine Works
General Dyestuff Corp.
Kinsley Chemical Co.
Rice Barton Research Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

DEINKING CHEMICALS
E. I. du Pont de Nemours & Co., Inc.
General Dyestuff Corp.
Kinsley Chemical Co.
Nopco Chemical Co.

DE-MINERALIZING EQUIPMENT
Hungerford & Terry, Inc.

DEMULSIFIERS
Wyandotte Chemicals Corp., Michigan Alkali Div.

DENSOMETERS
W. & L. E. Gurley

DESIGN CONSTRUCTION
Ebasco Services

DETERGENTS
Amalgamated Chemical Corp.
American Cyanamid Company Industrial Chemicals Division
Calgon, Inc.
Diamond Alkali Co.
General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

DEWAXING CHEMICALS
American Cyanamid Company Industrial Chemicals Division
General Dyestuff Corp.
Nopco Chemical Co.

DIFFERENTIAL SCALES
Thwing-Albert Instrument Co.

DIGESTERS
Babcock & Wilcox Co.
Biggs Boiler Works Co.
Blaw Knox Company
Chicago Bridge & Iron Co.
Combustion Engineering-Superheater, Inc.
Lukenweld
Pandia, Inc.
Paper & Industrial Appliances
Pusey & Jones Corp.

DISPERSING AGENTS
Calgon, Inc.
Diamond Alkali Co.
General Dyestuff Corp.
Monsanto Chemical Company
National Aluminate Corp.
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

DOCTORS
The Bagley & Sewall Company
Bird Machine Company
Black Clawson Company
Downingtown Mfg. Co.
Lobdell United Co.
Lodding Engineering Corp.
The Moore & White Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

DOCTOR BLADES
The Bagley & Sewall Company
Bird Machine Company
Lodding Engrg. Corp.
The Moore & White Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Simonds Saw & Steel Co.
Westinghouse Electric Corp.

DRIERS
The Bagley & Sewall Company
Beloit Iron Works
Biggs Boiler Works Co.
Black Clawson Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Lukenweld
The Moore & White Co.
Murray Mfg. Co., D. J.
J. J. Ross Company
Red-Ray Mfg. Co., Inc.
Rice Barton Corporation
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

DRIERS—LABORATORY
The Noble & Wood Machine Co.

DRILLED SUCTION COUCH ROLLS
Manchester Machine Co.

DRILLED SUCTION DRUM ROLLS
Manchester Machine Co.

DRIVES
Appleton Machine Co.
The Bagley & Sewall Company
Beloit Iron Works
Bird Machine Co.
Black Clawson Company
Dodge Mfg. Corp.
Downingtown Mfg. Co.
Farrel-Birmingham Co.
Jeffrey Mfg. Co.
General Electric Company
Gibbs-Brower Company, Inc.
Manchester Machine Co.
Moore & White Co.
Murray, D. J., Mfg. Co.
Pusey & Jones Corp.
Rice Barton Corporation
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Bros. Mch. Co.
Valley Iron Works Co.

DRUM WINDERS
Manchester Machine Co.
Rice Barton Corporation

DRYER ROLL PYROMETER
Midwest Fulton Mch. Co.
Thwing-Albert Instrument Co.

DUSTERS
Appleton Machine Co.
Downingtown Mfg. Co.
Frank W. Egan & Co.
M. W. Jenkins Sons, Inc.
E. D. Jones & Son Co.
Moore & White Co.
D. J. Murray Mfg. Co
John Waldron Corp.

DUSTING BRUSHES
M. W. Jenkins Sons, Inc.

DYESTUFFS
American Cyanamid Company
Calco Chemical Div.
Ciba Company

E. I. du Pont de Nemours & Co., Inc.
Geigy Co., The
National Aniline Division, Allied Chemical & Dye Corp.

ELECTRIC HYGROMETER
Thwing-Albert Instrument Co.

ELECTRICAL PRECIPITATORS
Research Corporation

EMBOSSING MACHINES
Dilts Machine Works
Egan, Frank W., & Co.
John Waldron Corp.

EMBOSSING ROLLS
The Appleton Machine Co.
Gibbs-Brower Company, Inc.
Holyoke Machine Co.
B. F. Perkins & Son, Inc.
John Waldron Corp.
Wheeler Roll Co.

EMPLOYMENT SERVICE
Bixby, R. W., Inc.
Raymond, Chas. P., Service, Inc.

EMULSIFIERS
General Dyestuff Corp.
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp.

ENZYMES
Rohm & Haas Co.
Vanderbilt Co., R. T.

EVAPORATORS
Biggs Boiler Works Co.
Goslin-Birmingham Mfg. Co., Inc.
Murray, D. J., Mfg. Co.
Swenson Evaporator Co., Div. of Whiting Corp.
Westinghouse Electric Corp.

EXPANDERS
Mount Hope Machinery Co.

FANS
General Electric Co.
B. F. Perkins & Son, Inc.
Ross Engineering Co., J. O.
Westinghouse Electric Corp.

FEEDERS
Jeffrey Mfg. Co.
Merrick Scale Mfg. Co.
The Permutit Company

FELTS
Appleton Woolen Mills
Asten-Hill Mfg. Co.
Draper Bros. Corp.
Huyck & Son, F. C.
Lockport Felt Co.
Morey Paper Mill Supply Co.
Orr Felt & Blanket Co.
Sauler & Benninghofen
Waterbury Felt Co.
Waterbury, H., & Sons Co.
Williams-Gray Co.

FELT CLEANERS
Calgon, Inc.
General Dyestuff Corp.
Nopco Chemical Co.

FELT CONDITIONERS
Bird Machine Co.
The Noble & Wood Machine Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works

FELT GUIDES
Black Clawson Company
Frank W. Egan & Co.
Gilbert & Nash Co.
Moore & White Co.
The Noble & Wood Machine Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corp., John

FIBRE BOARD MACHINES
The Noble & Wood Machine Co.

FILLERS
American Cyanamid Company, Industrial Chemicals Division
J. M. Huber Corp.
A. M. Meincke & Son, Inc.
Vanderbilt Co., R. T.
Wyandotte Chemicals Corp., Michigan Alkali Div.

FILTERS
R. P. Adams Co., Inc.
Bird Machine Company
Holyoke Machine Co.
Hungerford & Terry, Inc.
Improved Paper Machinery Corp.
Johnson Corp.
Moore & White Co.
J. O. Ross Engrg. Corp.
The Sandy Hill Iron & Brass Works
Walworth Company

FITTINGS
The Bagley & Sewall Company
Crane Company
Grinnell Company
Shartle Bros. Mch. Co.
Walworth Company

FLEXIBLE COUPLINGS
Dodge Manufacturing Corp.
Egan, Frank W., & Co.
Jeffrey Mfg. Co.
John Waldron Corp.
Westinghouse Electric Corp.

FLOORING, GRATING AND TREADS
The Goodyear Tire & Rubber Company
Norton Co.

FLOW BOXES
Biggs Boiler Works Co.
Lukens Steel Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works

FORK LIFT TRUCKS
Elwell Parker Elec. Co.
Towmotor Corp.

FORMATION TESTERS
Thwing-Albert Instrument Co.
Williams Apparatus Co., Inc.

FOURDRINIERS
Beloit Iron Works
Black Clawson Company
Downingtown Mfg. Co.
Manchester Machine Co.
The Moore & White Co.
Noble & Wood Machine Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

FREENESS TESTERS
Testing Machines, Inc.
Williams Apparatus Co.

GASKETS
B. F. Goodrich Co.
The Goodyear Tire & Rubber Company

GEAR REDUCERS
Dodge Mfg. Corp.

GEARS
The Bagley & Sewall Company
Black Clawson Company
De Laval Steam Turbine Co.
Downingtown Mfg. Co.
Frank W. Egan & Co.
Farrel-Birmingham Co.
E. D. Jones & Sons Co.
Moore & White Co.
D. J. Murray Mfg. Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Westinghouse Electric Corp.
Western Gear Works

GRAPPLES
Blaw-Knox Company

GRAVITY FILTERS
Holyoke Machine Co.

GRINDERS
Carthage Machine Co.
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Hanchett Mfg. Co.
Lobdell United Co.
Norton Company
Samuel C. Rogers and Company
The Sandy Hill Iron & Brass Works

GRINDING WHEELS
Norton Company
Simonds Abrasive Co.

GUIDES
The Bagley & Sewall Company
Beloit Iron Works
Black-Clawson Co.
Egan, Frank W., & Co.
Gilbert & Nash Co.
The Moore & White Co.
Mount Hope Machinery Co.
Rice Barton Corporation
John Waldron Corp.

GUMMING MACHINES
Dilts Machine Works
Egan, Frank W., & Co.
The Sandy Hill Iron & Brass Works
Waldron, John, Corp.

GUMS
Hercules Powder Co., Inc.
National Starch Products, Inc.

HEAT EXCHANGERS AND RECOVERY SYSTEMS
Westinghouse Electric Corp.

WEST VIRGINIA PULP and PAPER COMPANY

230 Park Ave.
New York 17, N. Y.

35 East Wacker Drive
Chicago 1, Ill.

503 Market St.
San Francisco 5, Calif.

Manufacturers of West Virginia Mill Brand Papers

SUPERCALENDERED
ENGLISH FINISH
LITHOGRAPH
LABEL
OFFSET
EGGSHELL
MUSIC
POSTER
BOND
WRITING
ENVELOPE
MIMEOGRAPH
INDEX BRISTOL
POST CARD
COVER
CUP AND CONTAINER
FILE FOLDER
COATED
MACHINE COATED

KRAFT LINER BOARD
KRAFT CONVERTING AND KRAFT ENVELOPE

MILLS

Mechanicville, New York
Luke, Maryland
Covington, Virginia
Tyrone, Pennsylvania
Williamsburg, Pennsylvania
Charleston, South Carolina

PRICE & PIERCE LTD.

Wood Pulp and Paper Agents

60 E. 42 ST., N. Y. 17

ENGLISH ECCO CLAYS CLAYS

TRADE MARK

UNIFORM SUPERIOR DEPENDABLE

English China Clays Sales Corporation
551 Fifth Avenue, New York City

HEATING, VENTILATING & AIR CONDITIONING
The Appleton Machine Co.
E. D. Jones & Sons Co.
General Electric Co.
D. J. Murray Mfg. Co.
Red-Ray Mfg. Co., Inc.
Ross Engineering Corp., J. O. Ross, J. O., Engrg. Corp.
Valley Iron Works Co.
Westinghouse Electric Corp.

HOISTS
Reading Crane & Hoist Corp.

HOSE (Air, Water, Suction, etc.)
B. F. Goodrich Co.
The Goodyear Tire & Rubber Company

HUMECTANTS
Aktivin Division, Heyden Chemical Corp.
Nopco Chemical Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

IMPREGNANTS
American Cyanamid Company, Industrial Chemicals Division
B. F. Goodrich Chemical Co.

INDENTING MACHINES
Dilts Machine Works

INDUSTRIAL TIRES
B. F. Goodrich Co.

INDUSTRIAL TRACTORS
Towmotor Corp.

INKOMETER
Thwing-Albert Instrument Co

INSTRUMENTS, TESTING AND MEASURING
Black-Clawson Co.
Brown Instrument Co.
Cambridge Instrument Co.
General Electric Company
W. & L. E. Gurley
B. F. Perkins & Son
Taylor Instrument Cos.
Testing Machines, Inc.
Thwing-Albert Instrument Co.
Tracerlab, Inc.
A. van der Korput
Williams Apparatus Co.
Westinghouse Electric Corp.

JOINTS
The Bagley & Sewall Company
Beloit Iron Works
Cram Associates
Johnson Corp.
Rice Barton Corporation
Shartle Bros. Mch. Co.

JORDAN FILLINGS
Appleton Machine Co.
Bahr Brothers Mfg. Co.
E. D. Jones & Sons Co.
The Noble & Wood Machine Co.
Shartle Bros. Mch. Co.
Smith & Winchester Mfg. Co
Valley Iron Works Co.

KILNS
F. L. Smidth

KNIVES
Black Clawson Company
Bolton & Sons, Inc.
Dilts Machine Works, Inc.
Dusenbery Co., Inc.
Hamblet Machine Co.
E. D. Jones & Sons Co.
The Moore & White Co
The Noble & Wood Machine Co.
Simonds Saw & Steel Co.
Taylor Stiles & Co.
Valley Iron Works Co.

KNOTTERS
Black-Clawson Co.
Improved Paper Machinery Corp.

LABORATORY CORRUGATOR
The Noble & Wood Machine Co.
Thwing-Albert Instrument Co.

LABORATORY EQUIPMENT
Appleton Machine Co.
Bauer Brothers Co.
Biggs Boiler Works Co.
Bird Machine Company
Dilts Machine Works
W. & L. E. Gurley
Egan, Frank W., & Co.
Hermann Mfg. Co.
E. D. Jones & Sons Co.
Taylor Instrument Companies
Testing Machines, Inc.
Valley Iron Works Co.
John Waldron Corp.
Williams Apparatus Co., Inc.

LAMINATING MACHINES
The Bagley & Sewall Company
Dilts Machine Works
Egan, Frank W., & Co.
Rice Barton Corporation
John Waldron Corp.

LAY BOYS
Dilts Machine Works
Gibbs-Brower Company, Inc.
Hamblet Machine Co.
Moore & White Co.

LINTER COTTON
Hercules Powder Co., Inc.
Railway Supply & Mfg. Co.

LINTER PULP
Hercules Powder Co., Inc.

LUBRICANTS
Sinclair Refining Co.
Socony-Vacuum Oil Co.
Sun Oil Company
The Texas Company
Tide Water Associated Oil Co.

MAGAZINE REELS
Dilts Machine Works (Kohler Systems)

MATERIALS HANDLING
Dilts Machine Works
Jeffrey Mfg. Co.
Shartle Bros. Mch. Co.
The Wellman Engrg. Co.

MICROMETERS & CALIPERS
Farrel-Birmingham Co.
Lobdell Co.
Testing Machines, Inc.

MIXERS
Bailey & Co., Inc.
Mixing Equipment Co.

MICRO-CRYSTALLINE WAXES
Bareco Oil Co.
Sun Oil Company

MOISTURE CONTENT CONTROL
Cambridge Instrument Co.
Williams Apparatus Co., Inc.

MOISTURE METERS
Hart-Moisture-Meters

MOTORS
Elliott Company

MOTORS AND GENERATORS
Fairbanks, Morse & Co.
General Electric Company
Reliance Electric & Engrg. Co.
Westinghouse Electric Corp.

NICKEL AND NICKEL ALLOYS
The International Nickel Co.

NOZZLES
Spray Engrg. Co.

PACKING BOXES
Johnson Corporation
The Moore & White Co.
Shartle Brothers Machine Co.

PAPER MACHINE DRIVES
The Bagley & Sewall Company
Beloit Iron Works
Black-Clawson Co.
Manchester Machine Co.
Rice Barton Corporation
Westinghouse Electric Corp.

PAPER MACHINES
The Bagley & Sewall Company
Beloit Iron Works
Bagley & Sewall Co.
Black Clawson Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Lukenweld
Manchester Machine Co.
Moore & White Co.
Pusey & Jones Corp.
Rice Barton Corporation
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.

PAPER MACHINES—LABORATORY
The Noble & Wood Machine Co.

PAPER MACHINE SLICES
Black Clawson Company
E. D. Jones & Sons Co.
The Moore & White Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Valley Iron Works Co.

PAPER TUBE MACHINERY
Dietz Machine Works
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson Sharp Machine Co.
Jagenberg-Werke Akt. Ges.
Langston Co., Samuel M.

PARAFFINE WAXES
Sun Oil Company

PARAFFIN WAX EMULSIONS
American Cyanamid Co., Ind. Chem. Div.
Hercules Powder Co., Inc.
Nopco Chemical Co.

PASTING MACHINES
Beloit Iron Works
Black Clawson Company
Dilts Machine Wks.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Murray, D. J., Mfg. Co.

Supplying Your Requirements

AMERICA'S LEADING INDEPENDENT WASTE PAPER PACKERS

WASHINGTON, D. C.
CAMDEN, N. J.
NEW YORK, N. Y.
MINNEAPOLIS, MINN.

THOMAS PAPER STOCK COMPANY
1500 No. Hooker Street • Chicago 22, Ill.

Moore and White Co.
Potdevin Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corp., John

PEBBLE MILLS
F. L. Smidth & Co.

pH METERS
Cambridge Instrument Co.
Thwing-Albert Instrument Co.

PIPE
Armco Drainage & Metal Products, Inc.
Babcock & Wilcox Co.
Biggs Boiler Works Co.
Crane Company
Grinnell Company
Michigan Steel Casting Co.
National Tube Co.
Walworth Company

PIPE FITTINGS
Armco Drainage & Metal Products, Inc.
Crane Company
Grinnell Company
Michigan Steel Casting Co.
Walworth Co.

PITCH CONTROL
American Cyanamid Company, Industrial Chemicals Division
General Dyestuff Corp.
Monsanto Chemical Company
National Aluminate Corp.
Nopco Chemical Co.
Rohm & Haas Co.

PLASTICIZERS
American Cyanamid Company, Industrial Chemicals Division
Aktivin Division. Heyden Chemical Corp.
B. F. Goodrich Chemical Co.
Naugatuck Chemical Division of U. S. Rubber Co.
Nopco Chemical Co.
Rohm & Haas Co.

PLATERS
Gibbs-Brower Company, Inc.
Perkins & Son, Inc., B. F.

PLATES
Armco Steel Corp.
Babcock & Wilcox Co.
Lukenweld Division
Lukens Steel Company
J. O. Ross Engrg. Corp.
Timken Roller Bearing Co.

PLUGS
The Appleton Machine Co.
Black Clawson Company
E. D. Jones & Sons Co.
The Noble & Wood Machine Co.
Shartle Brothers Machine Co.

POPE TYPE REELS
Black-Clawson Co.
Egan, Frank W., & Co.
Manchester Machine Co.
Rice Barton Corporation

PRECISION SAMPLE CUTTER
Testing Machines, Inc.
Thwing-Albert Instrument Co.

PRESERVATIVES
E. I. du Pont de Nemours & Co.
General Dyestuff Corp.

PRESS ROLLS
Beloit Iron Works
Black-Clawson Co.
Goodrich, B. F., Company, Inc.
Manchester Machine Co.
Rice Barton Corporation

PRESSURE FILTERS
Holyoke Machine Co.

PRESSURE VESSELS
Biggs Boiler Works Co.
Chicago Bridge & Iron Co.
Combustion Engineering-Superheater, Inc.

PRESSES
Beloit Iron Works
Black Clawson Company
Dietz Machine Works
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Hudson-Sharp Mch. Co.
Manchester Machine Co.
The Moore & White Co.
Potdevin Machine Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.
Waldron Corp., John
E. G. Weber & Co., Inc.
Williams Apparatus Co.

PULLEYS
Black-Clawson Co.
Dodge Mfg. Corp.
Rice Barton Corporation

PULP CLASSIFIER
The Bauer Bros. Co.
Thwing-Albert Instrument Co.

PULP CLEANERS
Bird Machine Co.
Nichols Engrg. & Research Corp.

PULP STOCK VALVES
Crane Company
Grinnell Company
Record Fdy. & Mach. Co.
Rice Barton Research Corp.
Shartle Brothers Machine Co.

PULPERS
Apmew, Inc.
Bauer Brothers Co.
Cowles Company
Dilts Machine Works
E. D. Jones & Sons Co.
Midwest Fulton Mch. Co.
Morden Machines Co.
The Noble & Wood Machine Co.
Rice Barton Research Corp.
Shartle Brothers Machine Co.

PULPS
Brown Company
Bulkley, Dunton Pulp Co., Inc.
Gottesman & Co., Inc.
Lyddon & Co. (America), Inc.
Nordicus, Inc.
Parsons & Whittemore, Inc.
Perkins-Goodwin Co.
Price & Pierce, Ltd.
Pulp and Paper Trading Co.
Pulp Sales Corp.
Restigouche Co., Ltd.

PULP SCREENS
Bird Machine Co.
Trimbey Machine Works

PULPSTONES
Norton Company

PULP TESTERS
Williams Apparatus Co., Inc.

PULVERIZING MILLS
Combustion Engineering-Superheater, Inc.
Jeffrey Mfg. Co.
F. L. Smith & Co.

PUMPS
Apmew, Inc.
The Bagley & Sewall Company
Beloit Iron Works
Black Clawson Company
Buffalo Pumps, Inc.
Byron Jackson Co.
DeLaval Steam Turbine Co.
Downingtown Mfg. Co.
Fairbanks, Morse & Co.
Gibbs-Brower Company, Inc.
Johnson Corp.
Moore & White Co.
The Noble & Wood Machine Co
Nash Engineering Co.
Roots Connersville Blower Corp
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Warren Steam Pump Co.

RADIANT BURNERS
Red-Ray Mfg. Co., Inc.

RAG COOKING PROCESSES
The Kinsley Chemical Company
General Dyestuff Corp.
Rohm & Haas Co.

RAG CUTTERS
Gibbs-Brower Company, Inc.
B. F. Perkins & Son, Inc.
Taylor-Stiles & Co.

RECOVERY SYSTEMS
Babcock & Wilcox Co.
Chicago Bridge & Iron Co.
Combustion Engineering-Superheater, Inc.
Moore & White Co.
D. J. Murray Mfg. Co.
Pusey & Jones Corp.
Ross Engineering Corp., J. O.
Valley Iron Works Co.

REELS
The Appleton Machine Co.
The Bagley & Sewall Company
Beloit Iron Works
Black Clawson Company
Dilts Machine Works (Kohler Systems)
Egan, Frank W., & Co.
Downingtown Mfg. Co.
Hudson-Sharp Mch. Co.
Manchester Machine Co.

NEW CONSTRUCTION? EXPANSION?

You can build quickly, at low cost, with MARIETTA PRECAST CONCRETE WALL PANELS

MARIETTA concrete wall panels offer real cost savings—up to 30%—when used in place of usual 12-inch masonry walls. Permit fast erection any month of the year. Add seven inches of floor space around entire building perimeter. Have compression strengths of 4,000 psi. Insulated panels have U-value of 0.14, surpassing 12 inches of brick wall. If you're considering a new plant or expansion of existing facilities, let MARIETTA engineers show you how to build permanent, modern, low cost buildings in a hurry with MARIETTA solid or insulated precast concrete wall panels.

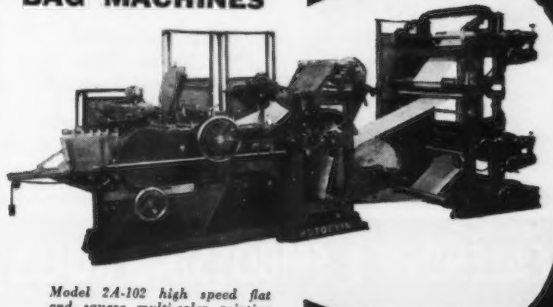
MODERN STORAGE

MARIETTA industrial storage systems offer low cost, labor-saving, large capacity facilities for all your bulk raw materials. MARIETTA concrete silos are designed and erected right, in sizes and arrangements to meet your requirements, will protect materials stored from fire, acid, moisture and air. Write for full details . . . TODAY.

The MARIETTA CONCRETE Corporation
MARIETTA, OHIO
BRANCH OFFICES: 509 FIFTH AVENUE, NEW YORK 17, N. Y. — PULASKI HWY. AT RACE RD., BALTIMORE 21, MD.

POTDEVIN
Flat and Square (Tucked)
PAPER BAG MACHINES

60 years of dependable service



Model 2A-102 high speed flat and square multi-color printing bag machine.

POTDEVIN Flat and Square machines make grocery, notion, millinery, shipping container and large specialty bags. Each machine is adjustable to make a large range of sizes. POTDEVIN Aniline Printing Presses can be directly connected to most POTDEVIN Bag Machines to produce multi-color bags. Attachments available for pre-printed papers, multi-wall, hole-punching, etc. Over 200 modern, high speed bag machine models for profitable operation.
Consult our engineers on any problem. No obligation. Literature on request.

POTDEVIN MACHINE CO.
223 North Street
Teterboro, N. J.
Designers and manufacturers of equipment for Bag Making, Printing, Coating, Laminating, Gluing and Labeling.

The Type S is self-supporting . . . and from a cost standpoint it carries its own weight too. It stops misalignment cold because it shifts with the roll — slashes maintenance because it's completely packless and self-lubricating. It's the perfect answer for many jobs.

The Johnson Corporation
828 Wood St., Three Rivers, Mich.

WILLIAMS-GRAY CO.
221 North LaSalle Street, Chicago 1, Illinois

Paul Foster
Barney Benson
Peter Talbot
Ross Lawrence
Herb. Fishburn

Lindsay & Niagara Wires
Knox "Excelsior" Felts
Siamese & Richland Dryer Felts
Carrier Rope
Splicing Tissues
Deckle Webbing
Etc.

CALENDER & EMBOSSING ROLLS
BUILT-REBUILT-RECONDITIONED

Building the finest calender and embossing rolls to your specifications is a Wheeler specialty—backed by 20 years experience. Calender and embossing rolls up to 240 inches built or reconditioned. Complete technical department at your service.

THE WHEELER ROLL CO.
1910 LANE BLVD. KALAMAZOO, MICH.

Moore & White Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
The Smith & Winchester Mfg. Co.
Waldron, John, Corp.

REFINERS
Appleton Machine Co.
Bahr Brothers Mfg. Co.
Bauer Brothers Co.
Dilts Machine Works
Gibbs-Brower Company, Inc.
Hermann Mfg. Co.
E. D. Jones & Sons Co.
Morden Machines Co.
Murray, D. J., Mfg. Co.
The Noble & Wood Machine Co.
Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Sprout Waldron & Co., Inc.
Sutherland Refiner Corp.
Valley Iron Works

REGULATORS
Apmew, Inc.
Bird Machine Company
General Electric Co.
Improved Paper Machinery Corp.
Johnson Corp.
Meyer Governor Co.
Shartle Brothers Machine Co.
Taylor Instrument Companies
Trimbey Machine Works
Westinghouse Electric Corp.

RESINS
American Cyanamid Company, Plastics & Resins Division
The Dow Chemical Company
B. F. Goodrich Chemical Co.
The Goodyear Tire & Rubber Company
Hercules Powder Co.
Monsanto Chemical Company
Naugatuck Chemical Division of U. S. Rubber Co.
Nopco Chemical Co.
Plaskon Division, Libbey-Owens-Ford Glass Co.
Reichhold Chemicals, Inc.
Rohm & Haas Co., Resinous Products Div.

ROLLS
Appleton Machine Co.
The Bagley & Sewall Company
Beloit Iron Works
Black Clawson Company
Dilts Machine Works
Downingtown Mfg. Co.
Frank W. Egan & Co.
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
B. F. Goodrich Co.
Holyoke Machine Co.
Lindsay Wire Weaving Co.
Lobdell United Co.
Manchester Machine Co.
The Moore & White Co.
D. J. Murray Mfg. Co.
The Noble & Wood Machine Co.
Perkins, B. F., & Sons Co.
Pusey & Jones Corp.
J. J. Ross Company
Rice Barton Corporation
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Stowe-Woodward Inc.
U. S. Rubber Co.
Valley Iron Works Co.
Waldron Corp., John
Wheeler Roll Co.

ROLL COVERS
The Goodyear Tire & Rubber Company

ROLL HANDLING EQUIPMENT
Dilts Machine Works (Kohler Systems)

ROLL STANDS
Cameron Machine Co.
Dilts Machine Works (Kohler Systems)
Frank W. Egan & Co.
Johnstone Engrg. & Mch. Co.
Moore & White Co.
Potdevin Machine Co.
The Sandy Hill Iron & Brass Works
John Waldron Corp.
H. G. Weber & Co., Inc.

ROLL WRAPPERS
Lawton Company

ROPE CARRIERS
Black Clawson Co.
The Moore & White Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works

ROTARY KILNS
Biggs Boiler Works Co.
F. L. Smidth & Co.

ROTARY STEAM JOINTS
Johnson Corp.
The Moore & White Co.
Rice Barton Corporation
Shartle Bros. Mch. Co.

RUBBER LINING
B. F. Goodrich Co.

RUBBER PRODUCTS
The Goodyear Tire & Rubber Company

SALT CAKE
Ethyl Corporation

SATURANTS
B. F. Goodrich Chemical Co.

SATURATING MACHINES
Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Moore & White Co.
Potdevin Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corp., John
Weber, Herman G.

SAVEALLS
Bird Machine Company
Chicago Bridge & Iron Co.
Improved Paper Machinery Corp.

SAWS
Simonds Saw & Steel Co.

SCALES
Merrick Scale Mfg. Co.
Testing Machines, Inc.

SCREEN PLATES
Bird Machine Company
Fitchburg Screen Plate Co.
Magnus Metal Corp.
Morey Paper Mill Supply Co.
Testing Machines, Inc.
Union Screen Plate Co.

SCREENS
Appleton Wire Works
Appleton Machine Company
The Bagley & Sewall Company
Bird Machine Company
Carthage Machine Co.
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
E. D. Jones & Sons Co.
Moore & White Co.
D. J. Murray Mfg. Co.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Trimbey Machine Works
Valley Iron Works Co.

SHAKE STICKS
Westinghouse Electric Corp.

SHEET MACHINES
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hermann Mfg. Co.
Valley Iron Works Co.
Williams Apparatus Co., Inc.

SHEET MACHINES—LABORATORY
The Noble & Wood Machine Co.

SHEETERS
Jagenberg-Werke Akt. Ges.

SHOWER PIPES
Bird Machine Company
Black-Clawson Co.
Downingtown Mfg. Co.
Moore & White Co.
Sandusky Fdy. & Mch. Co.
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.

SHREDDERS
Bauer Brothers Co.
Carthage Machine Co.
Gibbs-Brower Company, Inc.
Jeffrey Mfg. Co.

SILO STORAGE
Marietta Concrete Corp.

SIZE PRESSES
Black-Clawson Co.
Manchester Machine Co.
Rice Barton Corporation

SIZING
American Bitumuls & Asphalt Co.
American Cyanamid Company, Industrial Chemicals Division
The Dow Chemical Company
du Pont, E. I., de Nemours & Co.
Glidden Company
Hercules Powder Co.
The Hubinger Co.
Monsanto Chemical Company
National Aluminate Corp.
Nopco Chemical Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

SIZING TESTER
W. & L. E. Gurley
Testing Machines, Inc.
Thwing-Albert Instrument Co.
Williams Apparatus Co., Inc.

SLIME CONTROL
Buckman Laboratories, Inc.
Buckman Laboratories of Canada, Ltd.
The Dow Chemical Company
E. I. du Pont de Nemours & Co.
General Dyestuff Corp.
Magnuson Products Corp.
Monsanto Chemical Co.
National Aluminate Corp.
Rohm & Haas Co.
Vanderbilt Co., R. T.
Wyandotte Chemicals Corp., Michigan Alkali Div.

SLITTERS
The Bagley & Sewall Company
Black Clawson Company
Cameron Machine Co.
Carthage Machine Co.
Clark-Aiken Co.
Dietz Machine Works
Dilts Machine Works
Downingtown Mfg. Co.
Dusenbery Co., Inc.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Graphic Arts International Corp
Thomas W. Hall Co., Inc.
Hamblet Machine Co.
Hudson-Sharp Mch. Co.
Improved Paper Machinery Corp.
Jagenberg-Werke Akt. Ges.
Langston Co., Samuel M.
Moore & White Co.
D. J. Murray Mfg. Co.
Rice Barton Corporation
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co
Valley Iron Works Co.
Waldron Corp., John

SMOKE STACKS
Chicago Bridge & Iron Co.

SOFTNESS-STIFFNESS TESTER
W. & L. E. Gurley
Testing Machines, Inc.
Thwing-Albert Instrument Co

SOLUBLE OILS
American Cyanamid Company, Industrial Chemicals Division
General Dyestuffs Corp.
Nopco Chemical Co.

SPECIAL MACHINERY
Biggs Boiler Works Co.
Dilts Machine Works
Egan, Frank W., & Co.
Manchester Machine Co.
The Noble & Wood Machine Co
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
John Waldron Corp.

SPEED REDUCERS
Dodge Mfg. Corp.

SPLICING TISSUE
Williams-Gray Co.

STAINLESS STEEL
Armco Steel Corp.
Michigan Steel Casting Co
U. S. Steel Corp

STARCH
Clinton Foods, Inc.
The Hubinger Co.
National Starch Products Inc
Stein-Hall

STEAM JOINTS
The Moore & White Co
Rice Barton Corporation
Shartle Bros. Mch. Co

STEAM SPECIALTIES
Babcock & Wilcox Co.
Combustion Engrg. Co., Inc.
Johnson Corp.

STEEL
Armco Steel Corp.
Carnegie Illinois Steel Co
Lukens Steel Company
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works
U. S. Steel Corp.

STEEL, CLAD
Babcock & Wilcox Co
Lukens Steel Company

STEEL TANKS
The Biggs Boiler Works Co.
Chicago Bridge & Iron Co.
The Sandy Hill Iron & Brass Works

STRETCH TESTER
Thwing-Albert Instrument Co.

STOKERS
Detroit Stoker Co.

STORAGE BIN
Marietta Concrete Corp.

STUFF CHESTS
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Moore & White Co.
The Noble & Wood Machine Co.
Rice Barton Corporation
Shartle Brothers Machine Co.
Valley Iron Works Co.

SUCTION BOX COVERS
Westinghouse Electric Corp.

SUCTION BOXES
Beloit Iron Works
Black Clawson Company
Downingtown Mfg. Co.
E. D. Jones & Son Co.
Manchester Machine Co.
Moore & White Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

SUCTION ROLLS
Beloit Iron Works
Manchester Machine Co.

SULPHUR
Texas Gulf Sulphur Co.

SULPHUR BURNERS
Valley Iron Works Co.

SULPHUR DIOXIDE
American Cyanamid Company, Calco Chemical Div.
Virginia Smelting Co.

SUPERCALENDERS
The Appelton Machine Co.
B. F. Perkins & Son, Inc.

SYNTHETIC LATICES
American Cyanamid Company, Industrial Chemicals Division
B. F. Goodrich Chemical Co.
The Goodyear Tire & Rubber Company
Naugatuck Chemical Division of U. S. Rubber Co.
Nopco Chemical Co.

SYNTHETIC RESINS
American Cyanamid Co., Ind. Chem. Div.
Hercules Powder Co., Inc.
Rohm & Haas Co.

SYPHONS
Cram & Associates

TAKE OFF UNITS
Dilts Machine Works (Kohler Systems)

TALC
American Cyanamid Company, Industrial Chemicals Division
Vanderbilt Co., R. T.

TANKS
Biggs Boiler Works Co.
Chicago Bridge & Iron Co.
Kalamazoo Tank & Silo Co.
The Noble & Wood Machine Co.
B. F. Perkins & Sons, Inc.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Stebbins Engrg. Co.

TEARING TESTERS
Thwing-Albert Instrument Co.
Testing Machines, Inc.

TENSILE TESTERS
Thwing-Albert Instrument Co.
B. F. Perkins & Son, Inc.
Scott Testers Inc.
Testing Machines, Inc.
A. van der Korput

THICKENERS, DECKERS AND SAVEALLS
The Appleton Machine Co.
Bird Machine Company
Carthage Machine Co.
Chicago Bridge & Iron Co.
Dilts Machine Works
Downingtown Mfg. Co.
Improved Paper Machinery Corp.
Moore & White Co.
D. J. Murray Mfg. Co.
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

TIRES
Stroh Process Steel Co.

TITANIUM
American Cyanamid Co., Calco Chemical Div.
E. I. du Pont de Nemours & Co.
Titanium Pigment Co.
R. T. Vanderbilt Co.

TOOLS
Walworth Company

TRACTORS AND TRUCKS
Elwell Parker Elec. Co.
Towmotor Corp.

TRANSMISSIONS
Alexander Bros. Belting Co.
Dodge Mfg. Corp.
Jeffrey Mfg. Co.
Lovejoy Flexible Coupling Co.
Morse Chain Co.

TRAPS
Crane Co.
Grinnell Company
Johnson Corporation
Shartle Bros. Mch. Co.

TUBE MILLS
F. L. Smidth & Co.

TUBES
Babcock & Wilcox Co.
National Tube Co.

TUBING MACHINES
Dilts Machine Works

TUBING, MECHANICAL
National Tube Co.

TUBS
Biggs Boiler Works Co.
The Noble & Wood Machine Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

TURBINES
De Laval Steam Turbine Co.
General Electric Company
Westinghouse Electric Corp.

UNWINDERS
Dilts Machine Works (Kohler Systems)
Egan, Frank W., & Co.
Rice Barton Corporation
John Waldron Corp.

USED EQUIPMENT
Gibbs-Brower Co.
Thomas W. Hall Co.
J. J. Ross Company
Ross Paper Machy. Co.
Shartle Brothers Machine Co.

V-BELTS
Dodge Mfg. Corp.
Goodrich, B. F., Company, Inc.

VALVES
The Bagley & Sewall Company
Crane Company
DeZurick Shower Co.
Dilts Machine Works
Fabri Valve Co. of America
Grinnell Company
E. D. Jones & Sons Co.
Magnus Metal Corp.
D. J. Murray Mfg. Co.
The Noble & Wood Machine Co.
William Powell Co.
Record Fdy. & Mch. Co.
Rice Barton Research Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.
Walworth Company

VATS
Biggs Boiler Works Co.
Black-Clawson Co.
Beloit Iron Works
Rice Barton Corporation

WASHERS
The Bagley & Sewall Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Improved Paper Machinery Corp.
E. D. Jones & Sons Co.
Moore & White Co.
The Noble & Wood Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

WASTE TREATING EQUIPMENT
Hungerford & Terry, Inc.
Jeffrey Mfg. Co.

WATER CONDITIONING
Calgon, Inc.
General Dyestuff Corp.
Hungerford & Terry, Inc.
National Aluminate Corp.
The Permutit Company
The Sandy Hill Iron & Brass Works

WATER DISPERSIONS
American Cyanamid Company Industrial Chemicals Division
Naugatuck Chemical Division of U. S. Rubber Co.
Rohm & Haas Co., Resinous Products Div.

WATER FILTERS
Bird Machine Co.
Holyoke Machine Co.
Improved Paper Machinery Corp.

WATER FINISH EQUIPMENT
The Permutit Company

WATER PENETRATION TESTER
Thwing Albert Instrument Co.
Williams Apparatus Co., Inc.

WATER SOFTENERS
Hungerford & Terry, Inc.
Wyandotte Chemicals Corp. Michigan Alkali Div.

WATER TREATMENT
Dorr Company

WATER VAPOR CUPS
Thwing-Albert Instrument Co.

WAXING MACHINERY
Black Clawson Company
Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
The Mayer Machine Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John
Weber, Herman G.

WEB TENSION CONTROL
Dilts Machine Works (Kohler Systems)
Egan, Frank W., & Co.
John Waldron Corp.

WELDING EQUIPMENT
General Electric Company
Walworth Company
Westinghouse Electric Corp.

WET MACHINES
The Bagley & Sewall Company
Black Clawson Company
Carthage Machine Co.
Downingtown Mfg. Co.
Improved Paper Machinery Corp.
Moore & White Co.
The Noble & Wood Machine Co.
Pusey & Jones Company
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

WET STRENGTHENING AGENTS
American Cyanamid Co., Ind. Chem. Div.
Hercules Powder Co., Inc.
Plaskon Div. Libbey-Owns-Ford Glass Co
Reichhold Chemicals, Inc.
Rohm & Haas Co.

WETTING AGENTS
American Cyanamid Company Industrial Chemicals Division
Diamond Alkali Co.
General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Plaskon Division Libbey-Owens-Ford Glass Co
Rohm & Haas Co.
Wyandotte Chemicals Corp. Michigan Alkali Div.

WHITE WATER TREATING EQUIPT.
Bird Machine Co.
Hungerford & Terry, Inc.
The Sandy Hill Iron & Brass Works

WINDERS & REWINDERS
The Bagley & Sewall Company
Beloit Iron Works
The Appleton Machine Co.
Black Clawson Company
Kohler Systems
Cameron Machine Co.
Dietz Machine Works
Dilts Machine Works
Downingtown Mfg. Co.
Dusenbery Co., Inc.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson-Sharp Mch. Co
Jagenberg-Werke Akt. Ges.
Langston Co., Samuel M.
Manchester Machine Co.
Moore & White Co.
Potdevin Machine Co
Pusey & Jones Corp.
Rice Barton Corporation
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Corp.
Smith & Winchester Mfg. Co.
Waldron Corp., John

WINDING ROLL CHANGERS
Dilts Machine Works (Kohler Systems)
Egan, Frank W., & Co.
Waldron, John, Corp.

WIRE BRUSHES
M. W. Jenkins Sons, Inc.
Williams-Gray Co.

WIRE GUIDES
Black-Clawson Co.
Gilbert & Nash

WIRES
Appleton Wire Works
Eastwood-Nealley Corp.
International Wire Works
Lindsay Wire Weaving Co.
Williams-Gray Co.
Wisconsin Wire Works

WOOD SPLITTERS
The Appleton Machine Co.
Carthage Machine Co.
Manchester Machine Co.

INDEX TO ADVERTISERS

A

Alan Wood Steel Co. ..... —
Alexander Brothers ..... —
Amercoat Corp. 40
American Bitumuls & Asphalt Co. ..... —
American Cyanamid Co., Calco Chemicals Div. ..... —
American Cyanamid Co., Industrial Chemicals Div. ..... —
American Defibrator, Inc. ..... —
American Steel & Wire Co. .. —
Antara Chem. Div., General Dyestuff Corp. ..... —
Apmew, Inc. ..... —
Appleton Machine Co., The ... —
Appleton Wire Works, Inc. ... —
Appleton Woolen Mills 44
APW Products Co. 14
Armco Drainage & Metal Products ..... —
Armco Steel Corp. ..... —
Armstrong Machine Works .... —
Askania Regular Co. ..... —
Asten-Hill Mfg. Co. ..... —

B

Babcock & Wilcox Co. ..... —
Bagley & Sewall Co. ..... —
Bahr Bros. Mfg. Co. ..... —
Bailey Meter Co. ..... —
Bareco Oil Co. ..... —
Barrell, Wm. L., Co. ..... —
Bauer Bros. Co. ..... —
Beckman Instruments, Inc. .... —
Beloit Iron Works 35
Biggs Boiler Works Co. ..... —
Bird Machine Co. ..... —
Birmingham Committee of 100 . —
Bixby, R. W., Inc. ..... —
Black-Clawson Co. 8
Blaw-Knox Co. ..... —
Bowsher, N. P., Co. ..... —
Broughton, A. E., & Co. ..... —
Brown Co. ..... —
Buffalo Pumps, Inc. ..... —
Bulkley, Dunton Processes, Inc. —
Byron Jackson Co. ..... —

C

Calgon, Inc. ..... —
Cambridge Instrument Co. 51
Cameron Machine Co. 2
Carnegie-Illinois Steel Corp. ... —
Carthage Machine Co. ..... —
Chemipulp Process, Inc. ..... —
Chicago Bridge & Iron Co. .... —
Ciba Company ..... —
Clark-Aiken Co. ..... —
Classified Advertising 47
Clearing House 47
Clinton Foods, Inc. ..... —
Columbia-Southern Chem. Corp. —
Combustion Engineering - Superheater, Inc. ..... —
Cowles Co., Inc. ..... —
Crane Co. 4
Crucible Steel Corp. of America —

D

Deitz Machine Works ..... —
De Laval Steam Turbine Co. .. 44
Denver Equipment Co. ..... —
DeZurik Shower Co. 54
Diamond Alkali Co. ..... —
Dilts Machine Works 8
Dings Magnetic Separator Co. . 43
Dodge Manufacturing Corp. ... —
Dow Chemical Co. ..... —
Downingtown Mfg. Co. ..... —
Draper Brothers Co. 45
du Pont, E. I., de Nemours & Co. Electrochemical Dept. ..... —
du Pont, E. I., de Nemours & Co. Dyestuffs Dept. ..... —
du Pont, E. I., de Nemours & Co. Grasselli Chem. Dept. 17
du Pont, E. I., de Nemours & Co. Polychemicals Dept. ..... —
Dusenbery Co., Inc. ..... —

E

Ebasco Services, Inc. ..... —
Egan, Frank W., & Co. 44
Elixman Paper Core Co. ..... —
Elwell Parker Elec. Co. ..... —
English China Clays Sales Corp. 56

F

Farrel-Birmingham Co., Inc. ... —
Ferguson, The H. K. Co. ..... —
Fiber Glass Div., Libbey-Owens-Ford Glass Co. ..... —
Fitchburg Screen Plate Co. ... —

G

Geigy Co. ..... —
General Dyestuff Corp. ..... —
General Electric Co. ..... —
Gibbs-Brower Co. 50
Gilbert & Nash Co. ..... —
Glidden Co. ..... —
Goodrich Chemical Co. ..... —
Goodrich Co., B. F. ..... —
Goodyear Tire & Rubber Co. .. —
Goslin-Birmingham Mfg. Co. .. —
Gottesman & Co. ..... —
Graton & Knight Co. ..... —
Graver Tank & Mfg. Co. ..... —
Grinnel Co., Inc. 44
Gurley, W. & L. E. ..... —

H

Hall, Thomas W., Co., Inc. ... 47
Hamblet Machine Co. ..... —
Hammersley Mfg. Co. ..... —
Hanchett Mfg. Co. 37
Hardinge Co., Inc. ..... —
Hart Moisture Meters, Inc. ... —
Hayden Wire Works ..... —
Heinrich, H. H. Co. 46
Hercules Powder Co. ..... —
Hermann Manfg. Co. ..... —
Heyden Chemical Co. ..... —
Holyoke Machine Co. 21
Hooker Electrochemical Co. ... —
Huber, J. M., Corp. ..... —
Hubinger Co., The ..... —
Hudson-Sharp Machine Co. 53
Hungerford & Terry, Inc. 54
Huyck, F. C., & Sons ..... —
Hydro-Silica Corp. ..... —

I

Improved Paper Machy. Corp. . —
International Nickel Co. ..... —
International Wire Works .... —

J

Jackson & Church Co. ..... —
Jeffrey Mfg. Co. ..... —
Jenkins, M. W., Sons, Inc. ... —
Johnson Corp., The 58
Johnson, Alvin H., & Co. ..... —
Jones, E. D., & Sons Co. ..... —

K

Kalamazoo Tank & Silo Co. ... —
Kinsley Chemical Co. 51
Knox Woolen Co. ..... —
Koppers Co., Inc. ..... —

L

Langston, Samuel M., Co. ..... —
Lewis-Shepard, Inc. ..... —
Libbey-Owens-Ford Glass Co. .. —
Lindsay Wire Weaving Co. ... —
Lobdell United Co. ..... —
Lockport Felt Co. ..... —
Lodding Engineering Co. 61
Lukens Steel Co. ..... —
Lyddon Co. ..... —
Lynch Corp. ..... —

M

Magnuson Products Co. ..... —
Magnus Metal Div., Nat. Lead Co. ..... —
Main, Charles T., Inc. 44
Manchester Machine Co. ..... —
Manheim Mfg. & Belting Co. .. —
Marietta Concrete Corp. 57
Mead Sales Co., The ..... —
Meincke, A. M., & Son. ..... —
Meisel Press Mfg. Co. ..... —
Mercer Paper Tube Co. 42
Merrick Scale Co. ..... —
Michigan Steel Casting Co. 44
Midwest Fulton Machine Co. .. —
Minneapolis-Honeywell Regulator Co. .....24 & 25
Mixing Equipment Co. ..... —
Monsanto Chemical Co. ..... —
Moore & White Co. ..... —
Moorhead Electrical Machinery. —
Morden Machines Co. ..... —
Morey Paper Mill Supply Co. . —
Morningstar, Nicol, Inc. ..... —
Mount Hope Machinery Co. ... —
Murray, D. J., Mfg. Co. ..... —

N

Nash Engineering Co. 39
National Aluminate Corp. 51
National Aniline Div., Allied Chem. & Dye Corp. ..... —
National Starch Products, Inc. . 13
National Tube Co. ..... —
Naugatuck Chem. Div., U. S. Rubber Co. 33
Niagara Alkali Co. 15
Nichols Engrg. & Research Co. —
Noble & Wood Machine Co. ... —
Nopco Chemical Co. 3
Nordicus, Inc. 42
Norton Co. ..... —

O

O'Donoghue, Roderick ..... —
Oldbury Electro Chemical Co. . —

P

Pandia, Inc. ..... —
Parsons & Whittemore ..... —
Pennsylvania Salt Mfg. Co. .. —
Perkins, B. F., & Sons Co. ... —
Perkins Goodwin Co. ..... —
Petroleum Specialties Co. ..... —
Pioneer Paper Stock Co. ..... —
Pitsburgh Piping & Equip. Co. —
Plaskon Div., Libbey-Owens-Ford —
Poirier Control Co. ..... —
Potdevin Machine Co. 57
Powell, William, Co. ..... —
Price & Pierce, Ltd. 55
Pulp & Paper Testing Co. ..... —
Pulp Sales Corp. ..... —
Pusey & Jones Corp., The .... —

R

Railway Supply & Mfg. Co. .. —
Raymond, Chas. P., Service, Inc. 47
Reading Crane & Hoist Co. ... —
Record Fdy. & Machine Co. ... —
Red Ray Manufacturing Co., Inc. —
Reichhold Chemicals, Inc. ..... —
Reliance Elec. & Engrg. Co. ... —
Research Corp. ..... —
Restigouche Co., Ltd. ..... —
Rice Barton Corp. ..... —
Reidel, Gus, & Son ..... —
Rogers, S. C., & Co. ..... —
Rohm & Haas Co. ..... —
Roosevelt Paper Co. ..... —
Roots-Connersville Blower Div. 41
Ross, J. J., Co. ..... —
Ross, J. O., Engrg. Co. ..... —
Ross Paper Machinery Co. ... 49
Rust Engineering Co. ..... —

S

Sandusky Fdy. & Mch. Co. ... —
Sandy Hill Iron & Brass Works —
Seaboard Air Line R.R. Co. .. —
Shartle Bros. Machine Co. 8
Shuler & Benninghofen 36
Sill Industries ..... —
Simonds Saw & Steel Co. ..... —
Sinclair Refining Co. ..... —
Sirrine, J. E., Co. 51
SKF Industries ..... —
Smidth, F., & Co. ..... —
Smith, A. O., Corp. ..... —
Smith & Winchester Mfg. Co. . —
Socony Vacuum Oil Co., Inc. .. —
Sonoco Products Co. ..... —
Spray Engineering Co. ..... —
Statement of Ownership 51
Stowe-Woodward ..... —
Stroh Steel Co. ..... —
Sun Oil Co. 6
Sutherland Refiner Corp. ..... —
Swenson Evaporator Co. Front Cover

T

Taylor Instruments Cos. ..... —
Taylor Stiles & Co. ..... —
Tennessee Coal, Iron & R. R. Co. ..... —
Testing Machines, Inc. ..... —
Texas Co., The ..... —
Texas Gulf Sulphur Co. 31
Thiele Kaolin Co. ..... —
Thomas Paper Stock Co. 56
Thwing-Albert Instrument Co. . —
Tide Water Assoc. Oil Co. .... —
Timken Roller Bearing Co. ..... Back Cover
Titanium Pigment Corp. 19
Torrington Co., Inc. 29
Tracerlab, Inc. ..... —

U

United Carbon Co., Inc. ..... —
United States Steel Export Co. —
United States Steel Supply Co. —
U. S. Rubber Co. 33
U. S. Steel Co. ..... —

V

Valley Iron Works Co. ..... —
Vanderbilt, R. T., Co. 10
Van der Korput, A. ..... —
Virginia Smelting Co. ..... —

W

Waldron, John, Corp. ..... —
Walworth Co. ..... —
Waterbury Felt Co. ..... —
Weber, H. G., & Co., Inc. ..... —
Wellman Engineering Co. ..... —
Westinghouse Electric Corp. ... —
West Virginia Pulp & Paper Co. 55
Weyerhaeuser Timber Co. .... —
Wheeler Roll Co. 58
Whiting Corp. ..... Front Cover
Williams Apparatus Co. ..... —
Williams Gray Co. 58
Wisconsin Wire Works ..... —
Wolferz, C. W. ..... —
Wyandotte Chemicals Corp. 27

BUSINESS STAFF

Arthur E. Gordon, Business Mgr.

Bruce E. Brown
15 West 47th Street, New York 36, N. Y. Plaza 7-2370

H. K. Vinton
CHICAGO, 3, ILL.: Room 1020, 79 West Monroe St. CEntral 6-2784

Frederick B. Grosse, Production Mgr.

George Heitzeberg
15 West 47th Street, New York 36, N. Y. Plaza 7-2370

H. L. Poulton
PITTSBURGH, 11, PA.: 610 Pennridge Road. Hemlock 1-1571

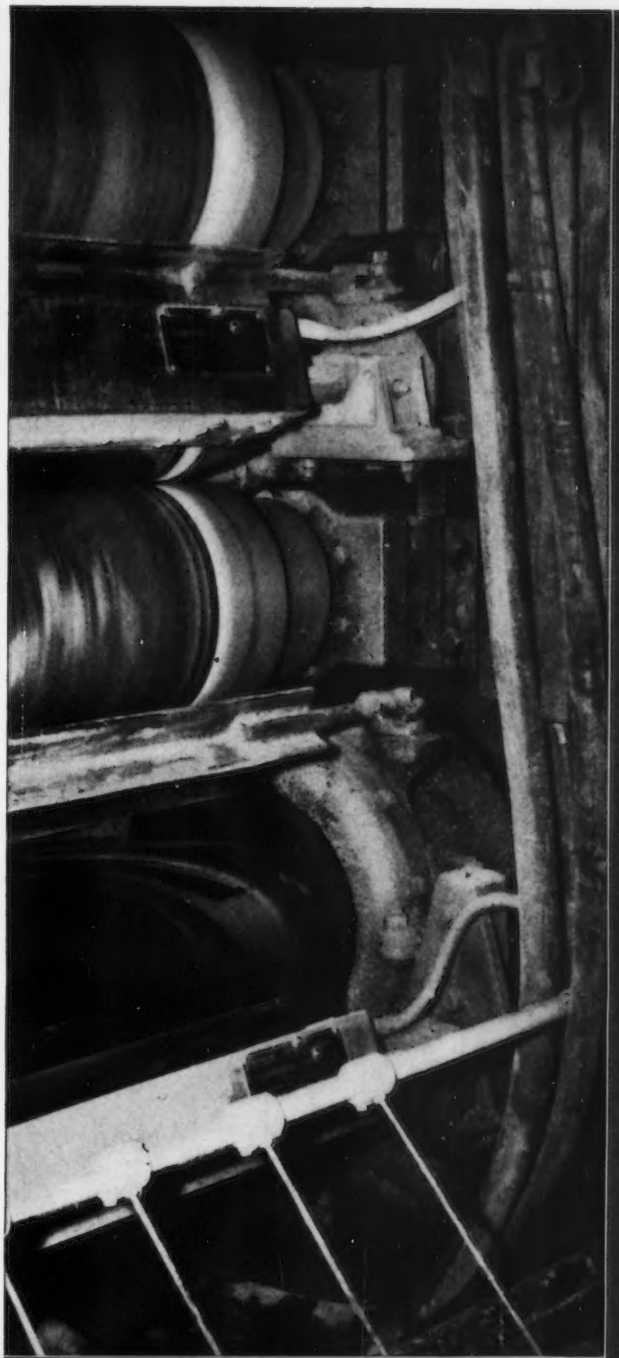
McDonald-Thompson Company
LOS ANGELES, 5, CAL.: 3727 West Sixth Street. DUnkirk 7-5391
SAN FRANCISCO, CAL.: 625 Market St. YUkon 6-0647
SEATTLE, 1, WASH.: Terminal Sales Bldg. MAin 3860
PORTLAND, 4, ORE.: 115 SW Fourth Ave. ATwater 7401
DENVER, 2, COLO.: 222 Colorado Nat'l. Bank Bldg. MA 2733

Edward M. Buck, Inc.
DALLAS, 5, TEXAS: 205 Irwin-Keasler Bldg., Riverside 4042
ATLANTA, 3, GA.: 5 Ivy Bldg., N.E. LAmar 4719

While we strive for accuracy in preparing the above index, which is purely a service to our readers, we cannot be responsible for errors.

HUGHES PRINTING CO.
EAST STROUDSBURG, PA.

Div. 41
49
orks
8
36
51
51
6
nt Cover
R.
31
56
k Cover
19
29
Co.
Co.
33
10
Co. 55
58
t Cover
58
27



DOCTORS

completely engineered

by LODDING

are essential

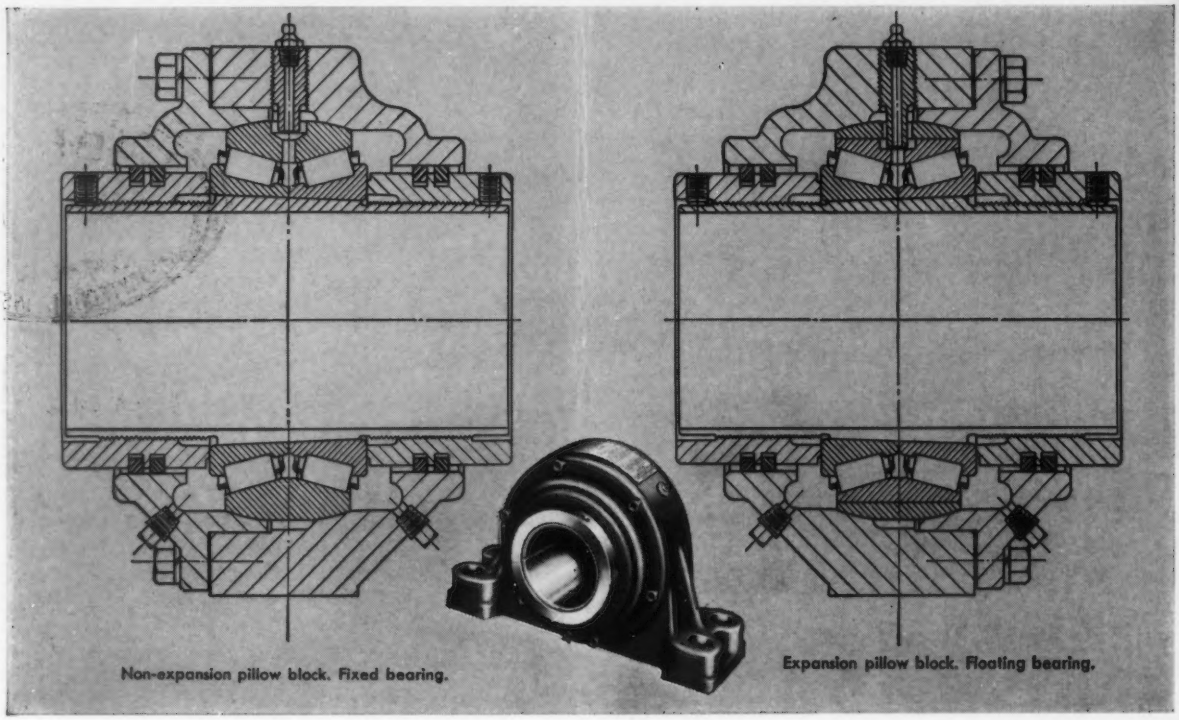
for today's

high-speed

production

Lodding Engineering Corporation, Worcester, Mass.
Represented by W. E. Greene Corporation,
Woolworth Building, New York

NEW TIMKEN® BEARING PILLOW BLOCK



First application of new tapered bore TIMKEN® bearing makes new Dodge-Timken pillow block more compact

IT takes up less space. It weighs less. Yet the new Dodge-Timken® All-Steel pillow block has tremendous load-carrying capacity.

It's the result of the combined achievements of the Dodge Manufacturing Corporation, Mishawaka, Indiana, and The Timken Roller Bearing Company and makes use of an entirely new Timken bearing. Never before has a self-aligning, non-adjustable tapered roller bearing with tapered bore been used in pillow blocks.

Being of all-steel construction, this new Dodge-Timken pillow block is more compact and fills a real need where space is a factor. It is available in both expansion and non-expansion designs. And it incorporates all the advantages of Timken tapered roller bearings.

Because of their tapered construction, Timken bearings take radial and thrust loads in any combination. Line contact between rollers and races gives Timken bearings load-carrying capacity to spare. Timken bearings are made of the finest steel ever developed for tapered roller bearings—Timken fine alloy steel—and under normal conditions will last the life of the machinery with which the pillow blocks are used.

When you install new Dodge-Timken pillow blocks, you can expect dependable performance because the bearings are the best. No other bearing can give you all the advantages you get with Timken bearings. Specify them for all your other machinery, too. Look for the trade-mark "Timken" on every bearing. The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable address: "TIMROSCO".

This symbol on a product means its bearings are the best.

TIMKEN

TRADE-MARK REG. U. S. PAT. OFF.

TAPERED ROLLER BEARINGS

NOT JUST A BALL ◯ NOT JUST A ROLLER ⬭ THE TIMKEN TAPERED ROLLER ⬭ BEARING TAKES RADIAL ◫ AND THRUST →◫← LOADS OR ANY COMBINATION →◫←

CK

ct